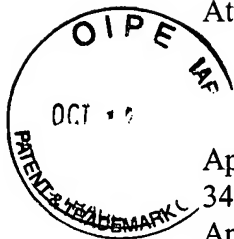




AF/IFW  
PATENT

Attorney's Docket No. 048782/276563

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE



Appl. No.: 10/689,955  
3460  
Applicant(s): Mileos, *et al.*  
Filed: Oct. 21, 2003  
Art Unit: 3632  
Examiner: A. King  
Title: Keyboard Support Mechanism

Confirmation No.:

Docket No.: 048782/276563  
Customer No.: 00826

Mail Stop Appeal Brief-Patents  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

**REVISED APPEAL BRIEF**

By the Office communication of September 6, 2005, the Examiner objected to the previously filed appeal brief because it "includes the heading of 'Grouping of claims' under 37 CFR 41.37(c), the heading 'Grounds of rejection to be reviewed on appeal' replaces 'Issues for review' and 'Grouping of claims'". The Applicants have amended their Appeal Brief to make "Issues for review" and "Grouping of claims" subheadings under the heading "Grounds of rejection to be reviewed on appeal". Thus, the Applicants submit they have obviated the basis for the Examiner's objection.

The Applicants respectfully petition for a one month extension of time to reply to the September 6, 2005 Office communication. The Applicant submits that no

further extension of time nor fees for net addition of claims are required. However, in the event that additional extensions of time are necessary to allow consideration of this paper, such extensions are hereby petitioned under 37 CFR §1.136(a), and any fee required therefore (including fees for net addition of claims) is hereby authorized to be charged to Deposit Account No. 16-0605.

Respectfully submitted,

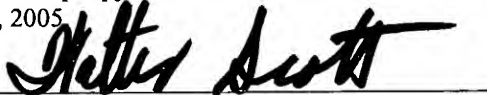


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CERTIFICATE OF MAILING

I hereby certify that this correspondence (in triplicate) is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to:  
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Walter Scott

Attorney's Docket No. 048782/276563

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**APPEAL BRIEF UNDER 37 CFR § 41.37**

This Appeal Brief is filed pursuant to the "Notice of Appeal to the Board of Patent Appeals and Interferences" filed April 13, 2005.

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1. ***Real Party in Interest.***

The real party in interest in this appeal is Humanscale Corp., the assignee of record of the above-referenced patent application.

2. ***Related Appeals and Interferences.***

There are no related appeals and/or interferences involving this application or its subject matter.

3. ***Status of Claims.***

1. (Rejected – Not Appealed)
2. (Rejected – Not Appealed)
3. (Rejected – Not Appealed)
4. (Rejected – Not Appealed)
5. (Rejected – Not Appealed)
6. (Rejected – Not Appealed)
7. (Rejected – Not Appealed)
8. (Rejected)
9. (Rejected – Not Appealed)
10. (Rejected – Not Appealed)
11. (Rejected – Not Appealed)
12. (Rejected – Not Appealed)
13. (Rejected – Not Appealed)
14. (Rejected – Not Appealed)
15. (Rejected – Not Appealed)
16. (Rejected – Not Appealed)
17. (Rejected – Not Appealed)
18. (Rejected – Not Appealed)
19. (Rejected – Not Appealed)
20. (Rejected – Not Appealed)
21. (Rejected – Not Appealed)
22. (Rejected – Not Appealed)
23. (Rejected – Not Appealed)

24. (Rejected – Not Appealed)
25. (Rejected – Not Appealed)
26. (Rejected – Not Appealed)
27. (Rejected – Not Appealed)
28. (Rejected – Not Appealed)
29. (Rejected – Not Appealed)
30. (Rejected – Not Appealed)
31. (Rejected)
32. (Objected – Not Appealed)
33. (Rejected – Not Appealed)
34. (Rejected – Not Appealed)
35. (Rejected – Not Appealed)
36. (Rejected – Not Appealed)
37. (Rejected – Not Appealed)
38. (Rejected – Not Appealed)
39. (Rejected – Not Appealed)
40. (Rejected – Not Appealed)
41. (Rejected – Not Appealed)
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44. (Rejected – Not Appealed)
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46. (Rejected – Not Appealed)
47. (Rejected – Not Appealed)
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52. (Rejected)
53. (Rejected)

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- 81. (Rejected)
- 82. (Rejected)
- 83. (Rejected)

- 84. (Rejected)
- 85. (Rejected)
- 86. (Rejected)
- 87. (Rejected)
- 88. (Cancelled)
- 89. (Rejected)
- 90. (Rejected)
- 91. (Rejected – Not Appealed)
- 92. (Rejected)
- 93. (Rejected)
- 94. (Rejected)
- 95. (Rejected)
- 96. (Rejected)
- 97. (Rejected)
- 98. (Rejected)
- 99. (Rejected)
- 100. (Rejected)
- 101. (Allowed)
- 102 (Allowed)

The Applicants appeal from the rejection of Claims 2-30, 32-87, and 89-100.

**4. *Status of Amendments.***

The Examiner denied entry of the amendment filed subsequent to the final rejection. However, the Examiner found that the non-entered amendment “has overcome the following rejections(s): 35 USC 112 1<sup>st</sup> and 2<sup>nd</sup> paragraphs and 35 USC 103(a), i.e., claims 2-7, 9-30, 32-47, 57-64, and 91.” Because the amendments overcome the rejections, the “[a]mendment[] present[s the] rejected claims in better form for consideration on appeal.” In other words, the amendment meets the standard of 37 C.F.R. § 1.116 and thus, the amendments should have been entered.

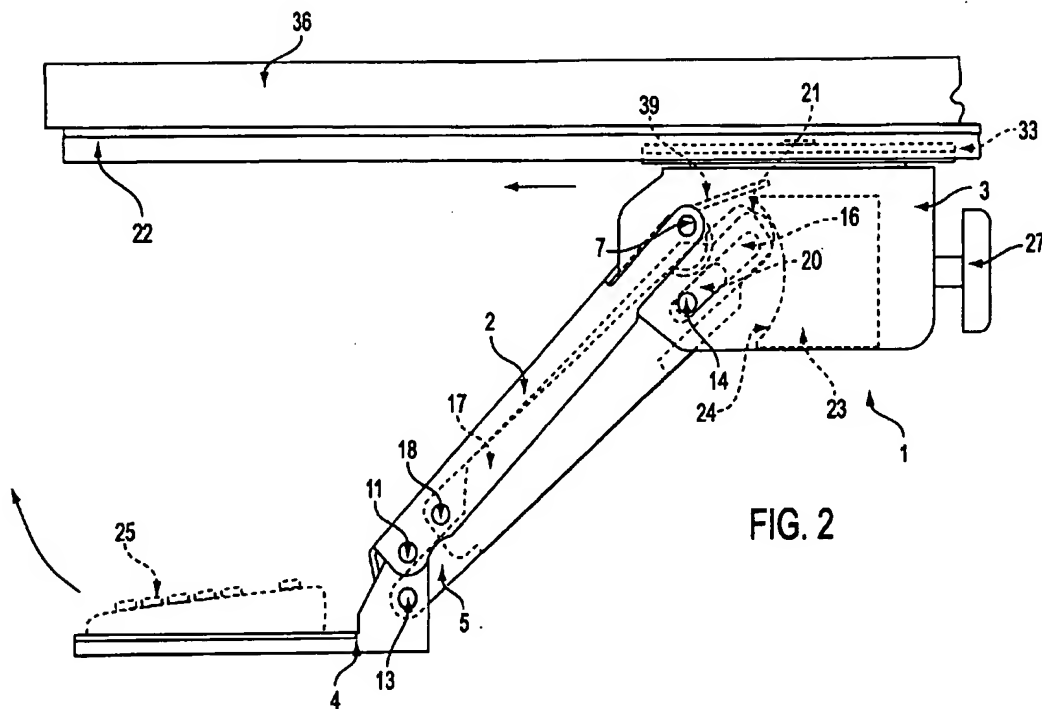


5. **Summary of Claimed Subject Matter.**

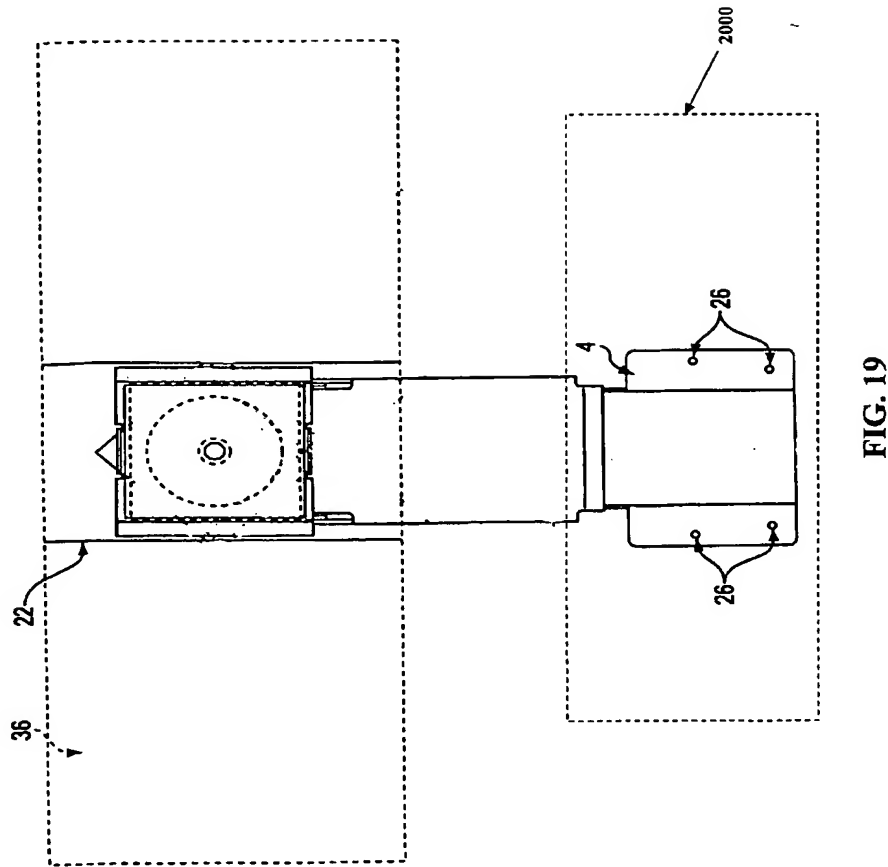
The present appeal of the final rejection entered in the above-identified application involves 16 independent claims, namely claims 48, 50, 65, 75, 77, 80, 83, 84, 86, 89, 90, 92, 95, 98, 99, and 100.<sup>1</sup>

*Claim 48*

Claim 48 is directed to an auxiliary shelf mechanism having an auxiliary shelf and a linkage to attach the auxiliary shelf to a desk. Fig. 2, reproduced below, illustrates the limitation that the attachment point between the linkage and the shelf is above the top surface of the shelf. According to another limitation, the linkage attaches to the shelf at a substantially interior point of said auxiliary shelf – *i.e.*, away from the left and right side edges – which is illustrated by Fig. 19 (which is also reproduced below).



<sup>1</sup> The rejection of independent claims 1, 101 and 102 are not being appealed because the Examiner stated in the Advisory Action that the proposed amendment would make claims 101 and 102 allowable and the amendment that was not entered canceled claim 1.



*Claim 50*

Claim 50 is directed to a mechanism for connecting a shelf to a base, *e.g.*, a desk. Figs. 1, 4, 5 and 6 illustrate an embodiment of the subject matter of claim 50. This device includes a mounting member (32) that attached to the base (36). Attached to mounting member (32) is a linkage having (i) an upper link (2); (ii) a lower link (5); (iii) a first end link (4); (iv) a second end link (3); (v) pin joints (7, 11, 13); and (vi) crank and slider type joint (about rod 14). The device of claim 50 also includes a stopping means comprising (i) an extension of said link having a crank and slider joint having a first engagement surface (21) and (ii) a second engagement surface (24).<sup>2</sup>

*Claim 65*

Claim 65 is directed to a mechanism for connecting a shelf having a front edge, a rear edge, a left side edge and a right side edge to a desk. Figs. 1, 4, 5 and 6 illustrate an embodiment of the subject

<sup>2</sup> Fig. 4 does not clearly identify the position of second engagement surface 24, however Fig. 2 and the text of the application (*e.g.*, ¶ 33) clarify this matter.

matter of claim 65. This device includes a mounting bracket (3) to which a first arm (2) is pivotally attached (about rod 7). The device of claim 65 also includes a shelf bracket (4) that is also pivotally attached to upper arm (2) (about rod 11), rod 11 being positioned above the upper surface of said shelf mounted on shelf bracket (4). Another part of the device of claim 65 is side (or lower) arm (17), which is pivotally attached to shelf bracket (4) (about rod 13) and connected to mounting bracket (3) about rod (14). The device of claim 65 also includes stopping surface (24).

*Claim 75*

Claim 75 is directed to a non-parallel mechanism for positioning an auxiliary shelf. Figs. 1, 4, 5 and 6 illustrate an embodiment of the subject matter of claim 75. This device includes a mounting bracket (3) to which a first arm (2) is pivotally attached (about rod 7). The device of claim 75 also includes a shelf bracket (4) having a shelving surface, shelf bracket (4) is also pivotally attached to upper arm (2) (about rod 11), rod 11 being positioned above said shelving surface. Another part of the device of claim 75 is side (or lower) arm (17), which is pivotally attached to shelf bracket (4) (about rod 13) and connected to mounting bracket (3) about rod (14). The device of claim 75 also includes stopping surface (24), a mounting track (22); and a swivel mechanism (32). This device further includes spring (39).

*Claim 77*

Claim 77 is directed to a non-parallel mechanism for positioning an auxiliary shelf. Figs. 1, 4, 5 and 6 illustrate an embodiment of the subject matter of claim 77. This device includes an articulating arm mechanism (1) which includes a mounting bracket (3) to which a first arm (2) is pivotally attached (about rod 7). The device of claim 77 also includes a shelf bracket (4) pivotally attached to upper arm (2) (about rod 11). Another part of the device of claim 77 is side (or lower) arm (17), which is pivotally attached to shelf bracket (4) (about rod 13) and connected to mounting bracket (3) about rod (14). The device of claim 77 also includes stopping surface (24), a mounting track (22); and a swivel mechanism (32). This device further includes spring (39) and the upper and side (or lower) arms are not parallel to each other.

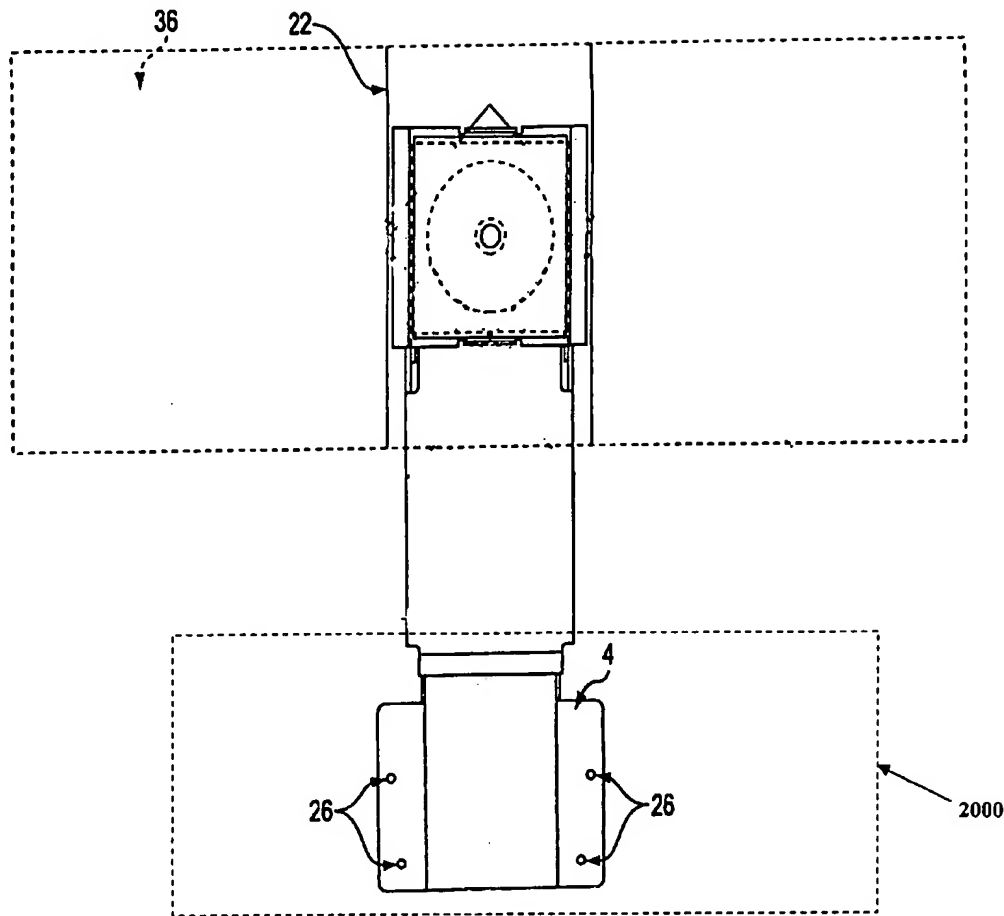
*Claim 80*

Claim 80 is directed to a non-parallel mechanism for positioning an auxiliary shelf. Figs. 1, 4, 5 and 6 illustrate an embodiment of the subject matter of claim 80. This device includes a mounting bracket (3) to which a first arm (2) is pivotally attached (about rod 7). The device of claim 80 also

includes a shelf bracket (4) having a shelving surface, shelf bracket (4) is also pivotally attached to upper arm (2) (about rod 11), rod 11 being positioned above said shelving surface. Another part of the device of claim 80 is side (or lower) arm (17), which is pivotally attached to shelf bracket (4) (about rod 13) and connected to mounting bracket (3) about rod (14). The device of claim 80 also includes stopping surface (24), a mounting track (22); and a swivel mechanism (32). This device further includes spring (39).

*Claim 83*

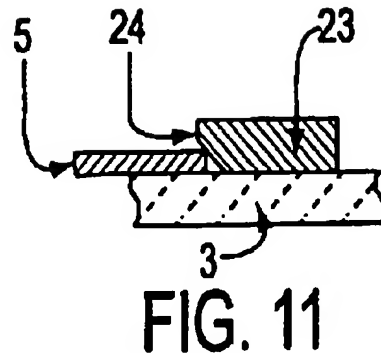
Claim 83 is directed to a non-parallel mechanism for positioning an auxiliary shelf. Figs. 1, 4, 5 and 6 illustrate an embodiment of the subject matter of claim 83. The device of claim 83 includes two linkage arms (2 and 17) connecting a mounting bracket (3) capable of being connected to a desk (36) and an auxiliary shelf bracket (4) having a shelving surface. Distinctively, the linkage arm (2) --auxiliary shelf bracket (4) connection is away from either of the lateral edges of said auxiliary shelf. *See* Fig. 19. Additionally, at least one pivot connection between one of said linkage arms (*e.g.*, 2) and the shelf bracket (4) is above the shelving surface. *See* Fig. 2.



**FIG. 19**

*Claim 84*

Claim 84 is directed to a computer support arm assembly. Figs. 1, 4, 5 and 6 illustrate an embodiment of the subject matter of claim 84. The device of claim 84 includes a first bracket member (3); a second bracket member (4) a first linkage arm (2) that is pivotally attached to the first bracket member (about rod 7) and to the second bracket member (about rod 13). A second linkage arm (17) in which the connection between said second linkage arm (17) and one of said first (3) and second (4) bracket members is along an elongated path (16). The device of claim 84 also includes a locking mechanism including an inclined surface on one of said bracket members and an engagement surface on said second linkage arm (*e.g.*, 24 and 5 in Fig. 11).



*Claim 86*

Claim 86 is directed to an improved mechanism for positioning a keyboard shelf. Figs. 1, 4, 5 and 6 illustrate an embodiment of the subject matter of claim 86. The device of claim 86, unlike the keyboard shelf mechanisms that had been known prior to the present invention, has its linkage connections (i) away from the side edges of the shelf (Fig. 19) and (ii) above the bottom surface of the auxiliary shelf (11 and 13 in Fig. 2).

*Claim 89*

Claim 89 is directed to a support mechanism for positioning a keyboard. Figs. 1, 4, 5 and 6 illustrate an embodiment of the subject matter of claim 89. The device of claim 89 includes a first bracket member (3); a second bracket member (4); a first arm (2) pivotally connected to said first (3) and second (4) bracket members; a second arm (17) pivotally connected to said first (3) and second (4) bracket members in which one of said pivotal connections of the second arm includes first (5) and second (24) slidably engaged wedge members (Fig. 11) affixed respectively to the said one of said bracket members (3 & 4) and said second arm (5).

*Claim 90*

Claim 90 is directed to an improved mechanism for positioning a keyboard shelf. Figs. 1, 4, 5 and 6 illustrate an embodiment of the subject matter of claim 90. The device of claim 90 has two linkage arms (2 & 5) connected to mounting bracket (3) and shelf bracket (4), shelf bracket (4) having a shelving surface wherein the linkage arms and brackets form a non-parallelogram linkage with at least one pivot connection between one of said linkage arms and the shelf bracket above the shelving surface (both 11 and 13 in Fig. 2).

*Claim 92*

Claim 92 is directed to an improved mechanism for positioning a keyboard shelf. Figs. 1, 4, 5 and 6 illustrate an embodiment of the subject matter of claim 92. The device of claim 92 has an auxiliary shelf attached to a linkage wherein the linkage attaches to the shelf at a substantially centralized point on the shelf and the connection is above the bottom surface of the auxiliary shelf. *See* Figs. 19 and 2.

*Claim 95*

Claim 95 is directed to a keyboard support device, an embodiment of which is illustrated in Figs. 1, 2, and 4-6. The device of claim 95 has a keyboard support member having a keyboard support surface (between keyboard 25 and bracket 4 in Fig. 2) and two side pieces spaced apart by a center section, said side pieces having aligned apertures (*see* Fig. 1 where shelf bracket 4 has an upright member (side pieces) on either side of central section 17 and each upright member has two apertures one corresponding to each of rods 11 and 13). The device of claim 95 also includes (i) a track (22) and a keyboard support carriage (32), which together forms a workstation engaging member and (ii) a linkage (arms 2 and 5).

*Claim 98*

Claim 98 is directed to a keyboard support device, an embodiment of which is illustrated in Figs. 1, 2, and 4-6. The device of claim 98 has a keyboard support member having a keyboard support surface (between keyboard 25 and bracket 4 in Fig. 2) and two side pieces above, and at substantially interior, but spaced, points on said keyboard support member, said side pieces having aligned apertures (*see* Fig. 1 where shelf bracket 4 has an upright member (side pieces) on either side of central section 17 and each upright member has two apertures one corresponding to each of rods 11 and 13). The device of claim 98 also includes (i) a track (22) and a keyboard support carriage (32), which together forms a workstation engaging member and (ii) a linkage (arms 2 and 5).

*Claim 99*

Claim 99 is directed to a keyboard support device, an embodiment of which is illustrated in Figs. 1, 2, and 4-6. The device of claim 99 has a keyboard support member having a keyboard support surface (between keyboard 25 and bracket 4 in Fig. 2) and two parallel side pieces spaced apart by a center section on said keyboard support member, said side pieces having aligned apertures (*see* Fig. 1 where shelf bracket 4 has an upright member (side pieces) on either side of central section 17 and each

upright member has two apertures one corresponding to each of rods 11 and 13). The device of claim 99 also includes a track (22) and a keyboard support carriage (32), which together forms a workstation engaging member. Additionally, the device of claim 99 includes a linkage (arms 2 and 5) having (i) an engagement surface on said linkage (21); and (ii) a wedge member (24) mounted for operable engagement with said engagement surface.

#### **Claim 100**

Claim 100 is directed to a keyboard support device, an embodiment of which is illustrated in Figs. 1, 2, and 4-6. The device of claim 100 has a keyboard support member having a keyboard support surface (between keyboard 25 and bracket 4 in Fig. 2) and two parallel side pieces spaced apart by a center section on said keyboard support member, said side pieces above, and at substantially interior, but spaced, points on said keyboard support member, said side pieces having aligned apertures (*see* Fig. 1 where shelf bracket 4 has an upright member (side pieces) on either side of central section 17 and each upright member has two apertures one corresponding to each of rods 11 and 13). The device of claim 100 also includes a track (22) and a keyboard support carriage (32), which together forms a workstation engaging member. Additionally, the device of claim 100 includes a linkage (arms 2 and 5) having (i) an engagement surface on said linkage (21); and (ii) a wedge member (24) mounted for operable engagement with said engagement surface.

#### **6. *Grounds of Rejection to be Reviewed on Appeal.***

##### ***Issues For Review***

While the amendment after final was not entered, the Examiner found that the amendment would “overcome the following rejections(s): 35 USC 112 1<sup>st</sup> and 2<sup>nd</sup> paragraphs and 35 USC 103(a), i.e., claims 2-7, 9-30, 32-47, 57-64, and 91.” Advisory Action of April 20, 2005 at ¶ 5. Because this amendment would overcome those rejections, the Applicants are not requesting review of those rejections in this appeal. Instead, when the above-identified application is returned to the Examiner for further prosecution consistent with the Board’s decision in this appeal, the Applicants will present the same amendments.

Additionally, in view of the allowance of claims 101 and 102, the Applicants are not requesting review of the double patenting objection to claims 8 and 31 in this appeal.



However, notwithstanding the amendment after final, the Examiner has maintained several rejections under sections 102 and 103 and the Applicant respectfully request review of those rejections in this appeal. Specifically, the Examiner has rejected claims as anticipated by Du Vall and by Watt. Additionally, the Examiner has maintained the rejection of certain claims as rendered obvious by Russell in view of McConnell; Russell in view of Watt; Russell in view of Watt and further in view of McConnell; and Watt in view of McConnell.

Based upon the Advisory Action of April 20, 2005 at ¶ 5, it appears that the Examiner is not maintaining the rejection of claims 16 and 38 under section 103(a). Because the Examiner is not maintaining the rejection of these claims, the Applicants are not seeking review of that rejection.

A. The Anticipation Rejections

a. Based on Du Vall

The Examiner rejected claims 48, 49 and 92 under section 102(b) as anticipated by U.S. Patent No. 5,302,015 to Du Vall. In formulating this rejection, the Examiner relied upon her reading of the figures of the Du Vall patent without regard to the express teaching in the text of that patent. Specifically, the Examiner alleges that Du Vall discloses an auxiliary shelf mechanism (Figs. 1-2b) having a “linkage attached to the shelf (14) at a substantially centralized, interior point of the auxiliary shelf removed from the side edges (*i.e.*, the links 52, 54 are attached to the shelf along the central longitudinal axis thereof, which is located interior of side edge 30 and the opposite side edge of the shelf) in a manner to prevent the shelf mechanism from extending below the bottom surface of the shelf (see Fig. 2).” Final Rejection of January 14, 2005 at 4.

b. Based on Watt

The Examiner also rejected claims 48, 83, 86, 87, and 94 under section 102(b) as anticipated by U.S. Patent No. 4,644,875 to Watt. In formulating this rejection, the Examiner relied upon her reading of the figures of the Watt patent without regard to the express teaching in the text of that patent. Additionally, the Applicants contend that the Examiner, in formulating this rejection, made an unreasonable use of the English language.

Specifically, the Examiner alleges that Watt discloses “an auxiliary shelf mechanism having an elongated downwardly opening channel-shaped member (30), two linkage arms (76, 78) that connect a mounting bracket (18) and shelf bracket/auxiliary shelf (22) having a top/shelfing (*sic*) surface (68), a bottom surface, and two side edges (at 22 and the edge opposite 22), wherein the linkage arms (76, 78)

are connected to the shelf bracket (22) at a pivot connection (82, 86) above the shelving (sic) surface (see Fig. 4) so that all of the auxiliary shelf mechanism is above the bottom surface of the shelf bracket/auxiliary shelf (22) . . .” Final Rejection of January 14, 2005 at 5.

B. The Obviousness Rejections

a. Based on Russell in view of McConnell

Based upon the Advisory Action of April 20, 2005 at ¶ 5, it appears that the Examiner is maintaining the rejection of claims 1, 50-56, 84, 85, 89 and 95-100 under section 103(a) as being unpatentable over U.S. Patent No. 5,292,097 to Russell in view of U.S. Patent No. 5,257,767 to McConnell. In this rejection, the Examiner notes that the primary reference, Russell, lacks several aspects of the claimed subject matter but alleges that it would have been obvious to one of ordinary skill to pick the necessary modifications from McConnell to make the claimed subject matter. Moreover, because the grounds for the rejection are set forth in a sentence that covers a page and a half (beginning on line 1 on page 6 and ending on line 10 on page 7), the Applicants are not sure they understand the grounds for the rejection.

b. Based on Russell in view of Watt

Based upon the Advisory Action of April 20, 2005 at ¶ 5, it appears that the Examiner is maintaining the rejection of claims 65-69 and 73 under section 103(a) as being unpatentable over Russell in view of Watt. The Examiner acknowledges that Russell “does not teach the shelf bracket (14) being pivotally connected to the front portion of the first/upper arm (16) by at least one pivot positioned above the upper surface of the shelf bracket.” However, the Examiner alleges that Watt provides the missing teachings and that it would have been obvious to modify Russell because Watt was a known equivalent.

c. Based on Russell in view of Watt and further in view of McConnell

Based upon the Advisory Action of April 20, 2005 at ¶ 5, it appears that the Examiner is maintaining the rejection of claims 70-72 and 74-82 under section 103(a) as being unpatentable over Russell in view of Watt and further in view of McConnell. Here, the Examiner acknowledges that “Russell does not teach the auxiliary shelf mechanism being capable of horizontally positioning the

shelf.” Again, the Examiner alleges that the other references provide the missing teachings and that it would have been obvious to modify Russell.

d. Based on Watt in view of McConnell

Based upon the Advisory Action of April 20, 2005 at ¶ 5, it appears that the Examiner is maintaining the rejection of claims 90 and 93 under section 103(a) as being unpatentable over Watt in view of McConnell. In brief, the Examiner asserts that Watt discloses the mechanism, but not with a non-parallelogram linkage. The Examiner further alleges that McConnell teaches a non-parallelogram linkage. The Examiner then alleges that it would have been obvious to combine these references.

***Grouping of claims***

Claims 48, 49 and 92 are a group and stand, or fall, together.

Claims 48, 83, 86, 87, and 94 are not a single group and do not stand, or fall, together. Specifically, dependent claim 94 depends from independent claim 47 and raises issues not relevant to claims 48, 83, 86 and 87. Furthermore, Claim 87, and the construction the Examiner gave to this claim, raises issues that are unique to this claim.

Claims 50-56, 84, 85, 89, and 95-100 are a group and stand, or fall, together.

Claims 65-69 and 73 are a group and stand, or fall, together.

Claims 70-72 and 74-82 are a group and stand, or fall, together.

Claims 90 and 93 are a group and stand, or fall, together.

7. ***Argument.***

A. The Claims Were Not Anticipated by the Cited Art

The Examiner rejected Claims 48, 49 and 92 as anticipated by U.S. Patent No. 5,302,015 to Du Vall. The Examiner also rejected claims 48, 83, 86, 87 and 94 as anticipated by U.S. Patent No. 4,644,875 to Watt. The Applicants respectfully traverse the Examiner’s anticipation rejections.

a. Du Vall Does Not Anticipate the Claimed Subject Matter

The Examiner rejected Claims 48, 49 and 92 as anticipated by U.S. Patent No. 5,302,015 to Du Vall.

i. *The Claimed Subject Matter*

As noted above, Claims 48 and 92 are broadly directed to the present invention. Prior to the Applicants' invention, there were two types of keyboard support mechanisms available. The first type, exemplified by Du Vall (and Watt discussed below), had a pair of linkage arms attached to the left side of the keyboard tray and another pair of linkage arms attached to the right side of the keyboard tray. See Du Vall Fig. 1 and Watt Fig. 3. In these mechanisms, the linkage arms attached to the left and right sides of the tray, and the connection between the tray and the linkage was above the top of the tray surface. The markedly different second type of prior art keyboard mechanisms, exemplified by Smeenge *et al.* U.S. Patent No. 4,616,798 (and McConnell discussed below), had a central linkage arm attached to the bottom of the keyboard tray.

Unlike either type of prior art mechanisms, the keyboard support mechanism of independent claims 48 and 92 has a central linkage arm (*i.e.*, away from the sides) that attaches to the tray above the top of the tray surface.<sup>3</sup>

ii. *The Rejection based on Du Vall*

*Inter alia*, the Examiner asserts that the Du Vall discloses a "linkage is attached to the shelf (14) at a substantially centralized, interior point of the auxiliary shelf removed from the side edges (*i.e.* the links 52, 54 are attached to the shelf along the central longitudinal axis thereof, which is located interior

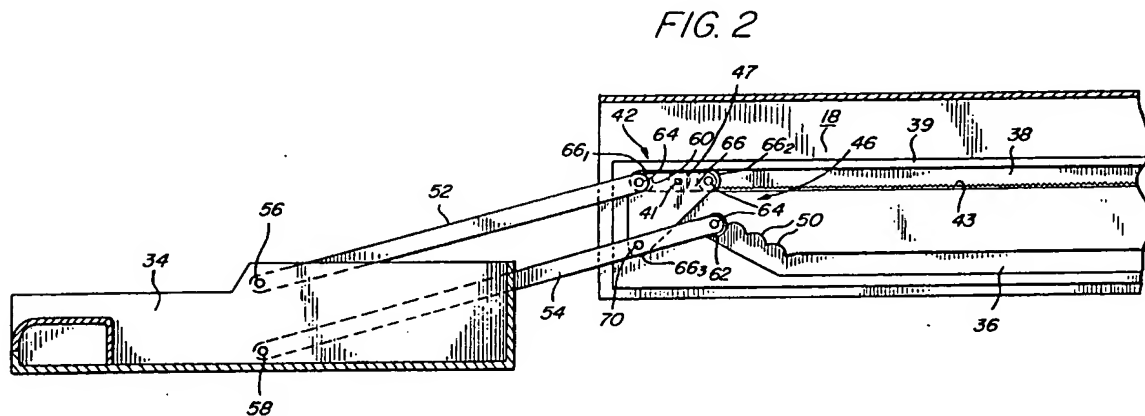
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<sup>3</sup> While the Applicants believe that one of ordinary skill would understand the reference to the "side edges" in Claims 48 and 92 to refer to the left and right (from the user's prospective) side edges, and not to the front or rear edges, the Applicants, in the Amendment after Final (which amendment was not entered) proposed amending claims 48 and 92 to more particularly point out that the side edges referred to in these claims does not include the front edge.

of side edge 30 and the opposite side edge of the shelf) in a manner to prevent the shelf mechanism from extending below the bottom surface of the shelf (see Fig. 2).” Office Communication at 4.

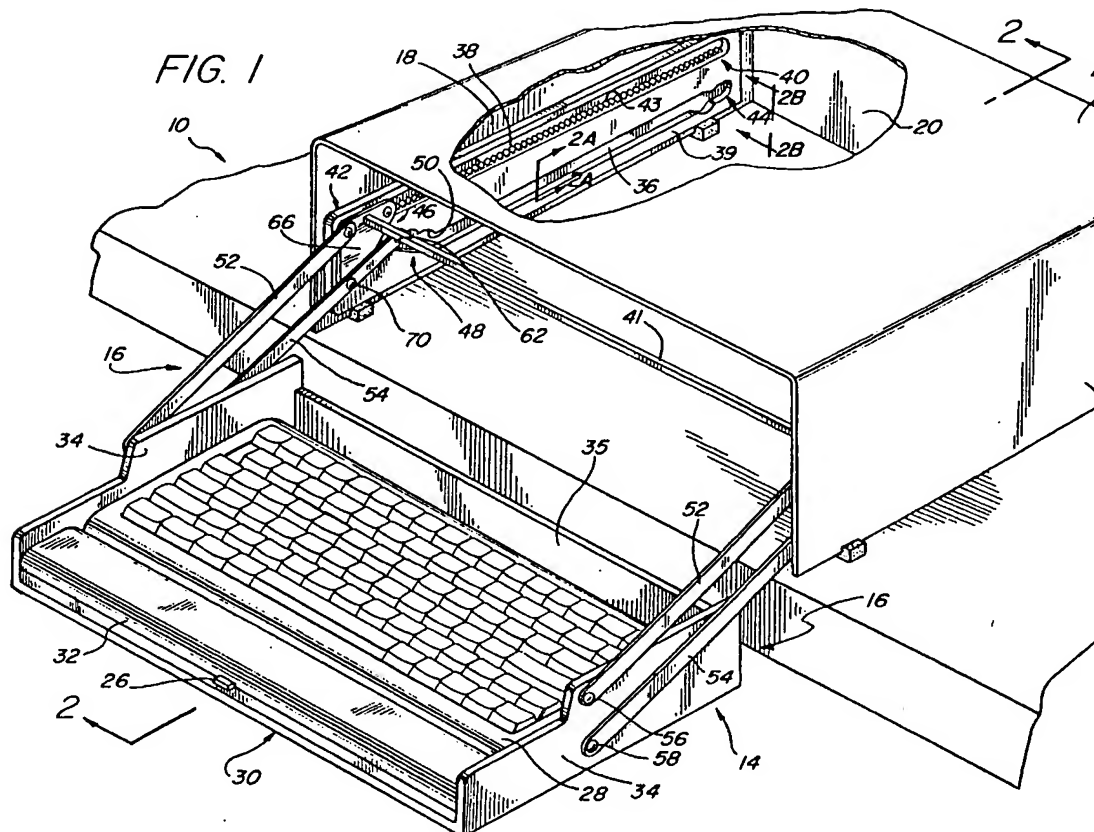
a) The Examiner’s misreading of Du Vall

The Applicants respectfully submit that the Examiner has misconstrued the cited reference. Instead of the linkage attachment being at a substantially centralized interior point, the Du Vall linkage is actually attached on the exterior of the shelf. Fig. 1. Indeed, the only support the Examiner cites for her findings, findings that are arbitrary, capricious, and an abuse of discretion, is Fig. 2 of the Du Vall patent, which is reproduced below.



Alone, at best, Fig. 2 of the Du Vall patent is ambiguous. This figure does not support the Examiner’s position because, while Fig. 2 clearly indicates that links 52 and 54 are on the other side of *side wall* 34 (34 is identified as a side wall by Du Vall at, for instance, col. 3, ln. 64) – those portions of links 52 and 54 that overlap side wall 34 are shown in dotted lines to indicate they are on the other side of side wall 34. Consequently, one of ordinary skill cannot determine where on shelf 30 side wall 34 is located from Fig. 2 alone.

The Applicants respectfully submit that the Du Vall reference is more than just Fig. 2. Indeed, “[a] reference, however, [must be] considered for all it taught, disclosures that diverged and taught away from the invention at hand as well as disclosures that pointed towards and taught the invention at hand.” *Ashland Oil, Inc. v. Delta Resins & Refractories, Inc.*, 776 F.2d 281, 227 U.S.P.Q. 657 (Fed. Cir. 1985) quoting *W.L. Gore & Associates, Inc. v. Garlock Inc.*, 721 F.2d 1540, 1550, 220 U.S.P.Q. 303 (Fed. Cir. 1983), cert. denied, 105 S.Ct. 172 (1984). To understand Fig. 2, the Applicants respectfully submit that one must use Fig. 1 (which is reproduced below in pertinent part) of the Du Vall patent as a guide.



Indeed, Du Vall states that “FIG. 2 is a **side** cross-sectional view of the embodiment of FIG. 1 taken along line 2--2”. Col. 2, ln. 65-66 (emphasis added). In this context, the Applicants respectfully

submit that left side links 52 and 54 of the device disclosed in the Du Vall patent are on the extreme lateral exterior of shelf 30, beyond **side wall 34**. This extreme lateral exterior position for attaching the links to the shelf structure is expressly illustrated on the right side of the Du Vall device in Fig. 1.

In the statement of the grounds for her rejection, the Examiner refers to “side edge 30”. While Du Vall Fig. 1 has a reference numeral “30”, it is for a “tray”, not a side edge. Col. 3, l. 55. Indeed, the edge of tray 30 closest to reference numeral “30” is what the Applicants respectfully submit would be designated, by one of ordinary skill, as the front edge – it is the edge closest to the space bar of the keyboard illustrated in Fig. 1 as well as the edge closest to a user.

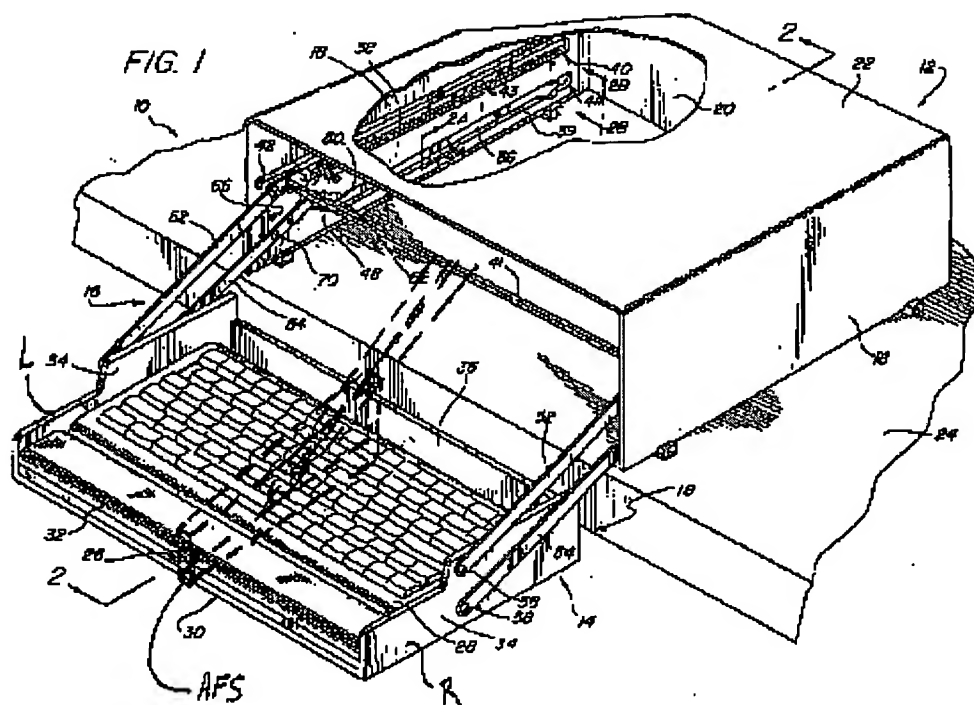
b) The Examiner’s misreading of the Rejected Claims

In contrast, one of ordinary skill would designate the edges at the user’s left or right as the side edges. *See* Merriam Webster’s Collegiate Dictionary, 1089 (10<sup>th</sup> ed) (“side . . . 1 a: the right or left part . . .”).

This left/right side usage by one of ordinary skill is confirmed by the usage of the word “side” in the Du Vall patent. Aside from the use of the word “side” in words such as “underside” or “outside”, the word “side” is used more than 20 times in the Du Vall patent to refer to what is a left or right side. *E.g.*, col. 2, l. 65; col. 3, l. 1 and col. 3, l. 48. Only once does the Du Vall patent use the word side to refer to a “rear side”. Col. 3, l. 48-49.

To better illustrate the differences between the claimed subject matter and the device described in the Du Vall patent, the Applicants have modified Fig. 1 of the Du Vall patent. In this modification, an added link-shelf connection is placed at “a substantially interior point of said auxiliary shelf removed from the side edges of said auxiliary shelf” (Away From the Sides – “AFS”). An additional modification

of the Du Vall Fig. 1 is that the sides of the Du Vall patent are identified by an "L"eft and an "R"ight indicator.



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Clearly, if a link-shelf connection is placed at "a substantially interior point of said auxiliary shelf removed from the [Left and Right] side edges of said auxiliary shelf" in the device described by the Du Vall patent, the link-shelf connection would interfere with the placement of the keyboard on the tray.<sup>4</sup>

In view of the above, the Applicants respectfully submit that the Examiner has not shown that Du Vall disclosed each element of the rejected claims. Specifically, rejected Claims 48, 49 and 92 call

<sup>4</sup> The Applicants again note that among the Amendments after Final (which amendments were made solely to expedite prosecution of the above-identified application) that were not entered were amendments to more particularly point out that the side edges referred to in these claims are the Left and Right side edges. Nonetheless, the Applicants continue to believe that the un-amended claims comply with § 112 and define patentable subject matter.



for a keyboard support – linkage attachment point removed from the left and right side edges, a limitation the Examiner reads out of the rejected claims.

Nonetheless, the Examiner purportedly finds that Du Vall discloses a keyboard support – linkage attachment point removed from the side edges. The Applicants, for the reasons stated above, respectfully submit that this finding is not supported by the reference. Indeed, this finding is inconsistent with the Du Vall patent. Therefore the Examiner's findings are arbitrary, capricious, and/or an abuse of discretion. Consequently, these findings, and the erroneous holding of anticipation (as well as the erroneous holding of obviousness) based on these findings, must be reversed.

b. Watt Does Not Anticipate the Claimed Subject Matter

As noted above, the Examiner also rejected claims 48, 83, 86, 87 and 94 as anticipated by U.S. Patent No. 4,644,875 to Watt.

i. *The Claimed Subject Matter*

As noted above, Claims 48, 83, 86, and 87 are broadly directed to the present invention. In contrast, dependent claim 94 is drawn to more narrowly defined aspects of the present invention.

Prior to the Applicants' invention (as discussed above), there were two types of keyboard support mechanisms available. The first type, exemplified by Watt (and Du Vall discussed above), had a pair of linkage arms attached to the left side of the keyboard tray and another pair of linkage arms attached to the right side of the keyboard tray. *See* Watt Fig. 3 and Du Vall Fig. 1. In these mechanisms, the linkage arms attached to the left and right sides of the tray, and the connection between the tray and the linkage was above the top of the tray surface. The markedly different second type of prior art keyboard mechanisms, exemplified by Smeenge *et al.* U.S. Patent No. 4,616,798 (and McConnell discussed below), had a central linkage arm attached to the bottom of the keyboard tray.

Unlike either type of prior art mechanisms, the keyboard support mechanism of independent claims 48, 83 and 86 has its linkage arm attachment point away from the (left and right) side edges, and, at least part of the tray-linkage connection above the tray surface.<sup>5</sup> Dependent claim 87 further specifies that the linkage arm attachment point is near the middle of the tray surface.

The Examiner also added claim 94 to this anticipation rejection. However, claim 94, raises different issues. For instance, dependent claim 94 specifies that the “linkage [of claim 47] comprises an elongated downwardly opening channel-shaped member.” While the Examiner alleges that Watt anticipates claim 94 the Examiner has not alleged that claim 47 is anticipated by Watt. Instead, the Examiner alleges that Russell in view of McConnell renders claim 47 obvious (which rejection is traversed and discussed below).

Starting with first principals, anticipation can only exist if a single reference discloses every element of a claim arranged in the order set forth in the claim. *E.g., Lewmar Marine, Inc. v. Barient Inc.*, 827 F.2d 744, 747, 3 USPQ2d 1766 (Fed. Cir. 1987). Furthermore, a dependent claim incorporates each element of each claim from which it depends. *E.g., Jeneric/Pentron Inc. v. Dillon Co.*, 205 F.3d 1377, 54 USPQ2d 1086 (Fed. Cir. 2000) (“a dependent claim, by nature, incorporates all the limitations of the claim to which it refers. See 35 U.S.C. Section 112, Para.4 (1994).”) Therefore, a dependent claim can only be anticipated if each of the claims from which it depends is also anticipated.

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<sup>5</sup> While the Applicants believe that one of ordinary skill would understand the reference to the “side edges” in Claims 48, 83 and 86 to refer to the left and right (from the user’s prospective) side edges, and not to the front or rear edges, the Applicants, in the Amendment after Final (which amendment was not entered) proposed amending claims 48 and 86 to more particularly point out that the side edges referred to in these claims does not include the front edge.

But the Examiner does not allege that the claim from which claim 94 depends – claim 47 – was anticipated. Consequently, the Examiner has not made a *prima facie* showing that claim 94 is anticipated. Therefore this rejection must be reversed.

ii. *The Rejection based on Watt*

*Inter alia*, the Examiner asserts that Watt teaches “connect[ing the linkage arms to the] shelf bracket/auxiliary shelf (22) having . . . two side edges (at 22 and the edge opposite 22), . . . wherein the linkage arms (76, 78) connect to the auxiliary shelf/shelf bracket (22) removed from the two side edges (see Fig. 2.) and near (defined by Merriam Webster’s Collegiate Dictionary as “close to”) the middle (defined by Merriam –Webster’s Collegiate Dictionary as “something intermediate between extremes”) . . .” Office Communication at 5.

a) The Examiner’s misreading of Watt

The Applicants respectfully submit the Examiner has misconstrued the Watt reference. The Examiner has ignored critical aspects of Watt relevant to the present rejection. Specifically, Watt discloses a tray-linkage attachment point that is at (a) the left and right side edges of the tray, and (b) the rear edge of the tray. Fig. 1.

The Applicants further submit that when the Watt reference is properly construed (*i.e.*, as one of ordinary skill would understand this reference), it teaches away from the claimed subject matter. Consequently, the Watt reference does not disclose, *and thus cannot anticipate*, the claimed subject matter.

The only citation the Examiner makes to the Watt reference to support her contention concerning the lateral positioning of the linkage arms with respect to their shelf bracket attachment points is Fig. 2.

The Applicants respectfully submit that Fig. 2 is a “side elevational view”. Col. 2, lines 11-16 (“Fig. 1 is a *side elevational view* . . . Fig. 2 is a view similar to Fig. 1 . . .” Emphasis added.) Because Fig. 2 is a side elevational view, *one cannot ascertain (from this figure) whether the linkage arms connect to the shelf are at, or are away from, the extreme side edges of the shelf.* Indeed, the Watt reference does not even state from where the view of Fig. 2 was taken.

Fig. 2 does not support the Examiner’s assertion that “connect[ing the linkage arms to the] shelf bracket/auxiliary shelf (22) having . . . two side edges (at 22 and the edge opposite 22), . . . wherein the linkage arms (76, 78) connect to the auxiliary shelf/shelf bracket (22) removed from the two side edges (see Fig. 2.) . . .”<sup>6</sup> Rather, according to Fig. 2, the linkage arms are connected to the shelf brackets 64. Shelf brackets 64 define the left and right extremities of the Watt shelf. Col. 3, l. 36-39 and Fig. 3. Additionally, one of ordinary skill would understand that pivot points 82 and 86 (the points where the linkage is attached to the shelf) are as close to the rear of support means 22 as practical. *See* Fig. 2 (reproduced below).

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<sup>6</sup> Watt states that reference numeral 22 corresponds to a support means, which comprises left and right support brackets 64. Col. 3, l. 36-39.

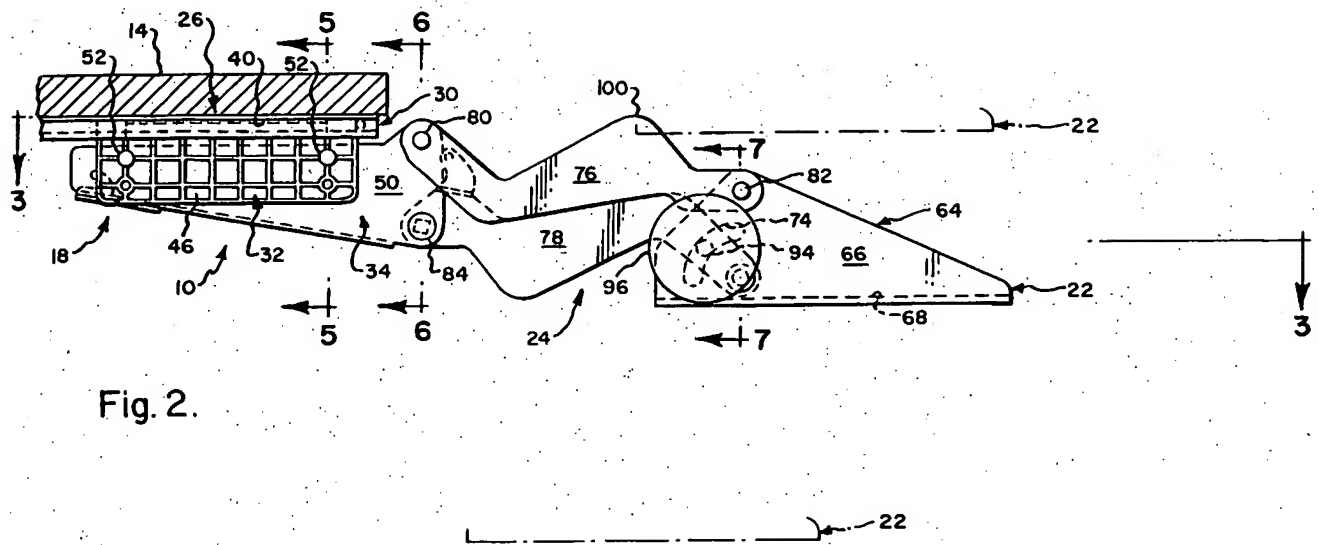


Fig. 2.

Furthermore, Fig. 2 provides information that is inconsistent with the Examiner's finding that the Watt reference teaches attaching the linkage arms "near the middle" of the shelf. Specifically, Fig. 2 identifies the plane of view for, *inter alia*, Figs. 3 and 7. Any evaluation of Fig. 2 concerning the position of the attachment between the **links** (76 & 78) and **upstanding plate portions** 66 without due consideration of both Figs. 3 and 7 is arbitrary, capricious, and an abuse of discretion.

In contrast to the unknown position of the view upon which the Examiner relies – *i.e.*, Fig. 2 – Fig. 3 is a view taken in a plane just above the auxiliary shelf. *See* line 3—3 in Fig. 2. Consequently, Fig. 3 (unlike Fig. 2 upon which the Examiner improperly relies) shows the relationship of the linkage arms (76 & 78) to the edges (**upstanding plate portions** 66) of the shelf bracket of the device disclosed in the Watt patent. In Fig. 3 (reproduced below in pertinent part) it is apparent that the linkage arms (76 and 78) are attached to **upstanding plate portions** (66) at (one arm on either side of the upstanding plate), and not away from, the side edges (64).

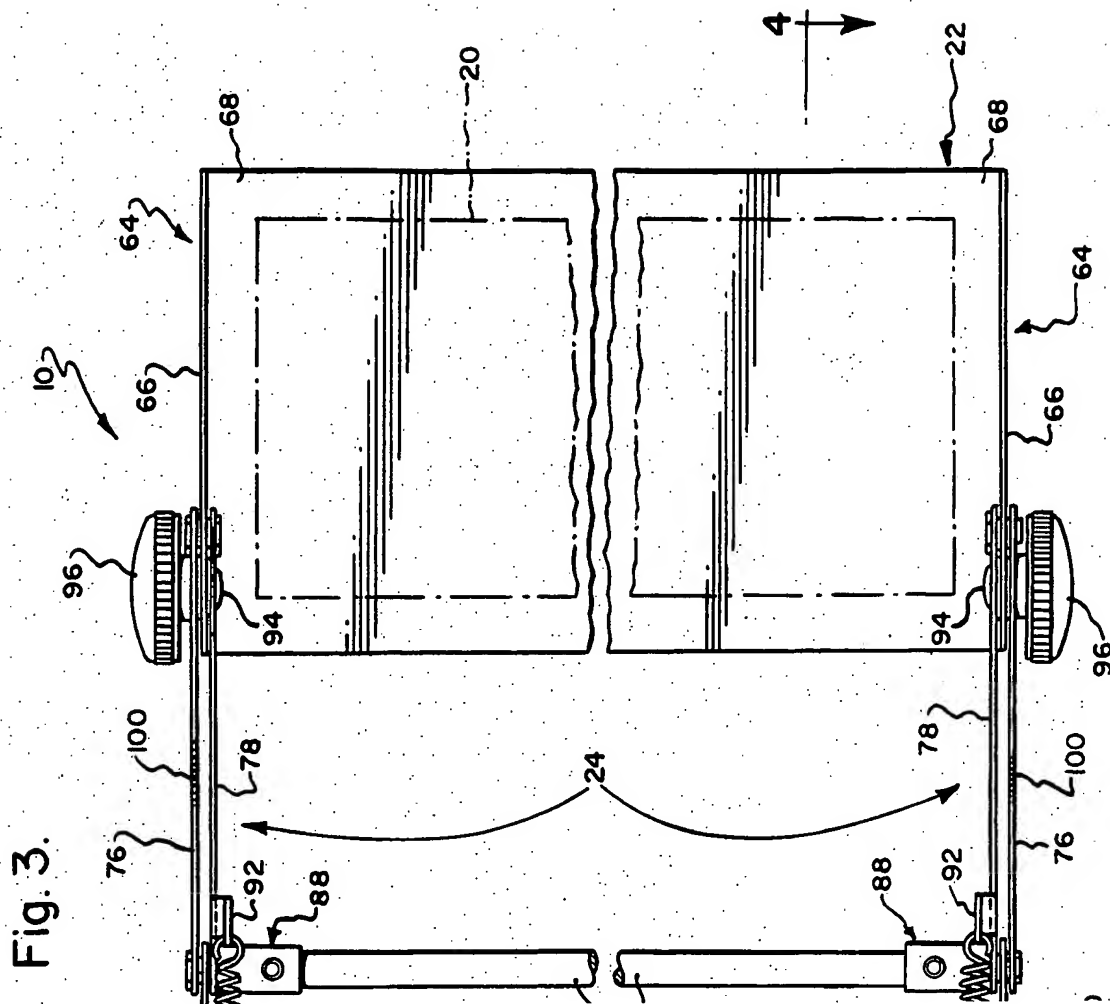


Fig. 3.

In sum, because Watt discloses a tray – linkage attachment that is (a) on the periphery of the left and right sides of the tray, and (b) as close to the rear of the tray as practicable, Watt does not disclose a support mechanism with a tray – linkage attachment point away from either of the lateral edges of the tray. As Watt does not disclose this aspect of the claimed subject matter, it cannot anticipate the claimed subject matter. For this reason alone, the rejection of claims 48, 83, 86, 87 and 94 must be reversed.

b) The Examiner's misreading of Claim 87

The Examiner's construction of the phrase "near the middle" of the tray in claim 87 to include something beyond the perimeter of the tray is unreasonable because this construction is contrary to the understanding one of ordinary skill would have of this term.

The Examiner's use of the cited dictionary definitions of the words "near" and "middle" render these words trivial. As best as the Examiner's use of these words is understood by the Applicants, something on the outer edges of a twelve-foot wide surface is "near the middle" of the surface, because two millimeters inside a twelve foot surface is fully two millimeters from the outer edge, and thus intermediate between the extreme edges of the surface. Moreover, as the extremity is only two millimeters away from this intermediate point, the extremity is "near the middle".

While Lewis Carroll (the mathematician who wrote, among things, *Alice Through the Looking Glass*) might have appreciated this analysis, the Applicants respectfully submit that one of ordinary skill in the relevant art would not consider an extremity to be near the middle of a surface because it is only two millimeters away from some point that itself is not an extremity. Rather, the Applicants respectfully submit that to one of ordinary skill, the phrase "near the middle" connotes a position that (a) is not in contact with an extremity, and (b) approaches the midline of the surface. When such an understanding of the phrase "near the middle" is used, it is clear that Watt does not teach positioning the linkage arms "near the middle".

Contrary to the claimed subject matter, Watt teaches positioning the linkage arms at the lateral and rearward extremities. Thus, Watt does not anticipate, but instead teaches away from the claimed subject matter. Therefore the present rejection must be reversed.

c) There is No Basis in the Present Record to Reject Claim 97 as Anticipated

Dependant claim 94 adds the limitation that the linkage of claim 47 “comprises an elongated downwardly opening channel-shaped member.” Independent claim 47 defines a structure comprising a mounting bracket, an upper arm, a lower arm and a shelf bracket, a structure that the Applicants respectfully submit would be recognized by one of ordinary skill as a linkage. Thus, one of ordinary skill would understand claim 97 as limiting the structure of claim 47 to structures in which part of the mounting bracket, upper arm, lower arm and shelf bracket combination has an “elongated downwardly opening channel-shaped member.”

As best as the Applicant’s understand the basis for the present rejection, the Examiner alleges that the structure identified by reference numeral 30 is an “elongated downwardly opening channel-shaped member.” Office Communication at 5. The Applicants respectfully submit that the Examiner has mischaracterized this structure.

The Applicants acknowledge that the structure identified by reference numeral 30 is a channel-shaped member, and Fig. 5 shows that structure 30 is downwardly opening. However, structure 30 is a track for follower member 32. Col. 2, l. 56 – 61. Mounting bracket 34 is attached to follower member 32 by fastener 52. In other words, while Watt may disclose an “elongated downwardly opening channel-shaped member,” Watt does not disclose a linkage including an “elongated downwardly opening channel-shaped member.” Therefore, Watt does not anticipate claim 97.

Furthermore, because there is no showing that Watt anticipates claim 47, the independent claim from which claim 97 depends, there is no showing that Watt anticipates claim 97. For these reasons, the present rejection must be reversed.



In sum, when the Watt reference is properly applied, it does not teach the subject matter of Claims 48, 83, 86, 87 and 94. Therefore the anticipation rejection based upon Watt must be reversed.

B. Obviousness

The Examiner made (and maintained) four rejections based on allegations of obviousness. However, the Applicants respectfully submit that the Examiner failed to set forth a *prima facie* showing of obviousness with respect to each of these rejections. For instance, none of these rejections provides any evidence of any teaching or suggestion to combine the cited references. Moreover, none of these rejections provides an objective showing of a motivation to combine the cited references. Consequently, each of these rejections must be reversed.

Furthermore, the Examiner has failed to properly consider the secondary evidence of non-obviousness that is of record. For this further reason, the present rejections must be reversed.

a. Russell in view of McConnell

As noted above, while the Examiner rejected Claims 1-7, 9-15, 17-30, 32-37, 39-47, 50-64, 84, 85, 89, 91, and 95-100 as obvious over Russell in view of McConnell, the Examiner, in the April 20, 2005 Advisory Action stated the proposed amendment after final would obviate the rejection of claims 2-7, 9-30, 32-47 57-64 and 91. Consequently, the Applicants are only addressing claims 50-56, 84, 85, 89, and 95-100 in this appeal.

With respect to the claims addressed in this appeal, the Applicants respectfully submit that the Examiner has not set forth a *prima facie* showing that the subject matter of these claims is obvious. Specifically, the Applicants respectfully submit that the Examiner has not (i) presented any rational for ignoring the inconsistencies between the Russell and McConnell references, (ii) identified what part of which reference is being combined with what of the other reference, (iii) provided any objective

teaching or suggestion to modify, (iv) provided evidence that there would have been a reasonable expectation that if the teaching of the reference were combined, it would be successful. Therefore, the Examiner has not set forth a *prima facie* showing that the subject matter of these claims is obvious and this rejection must be reversed.

i. *The Cited Art is inconsistent*

“When a rejection depends on a combination of prior art references, there must be some teaching, suggestion, or motivation to combine the references.” *In re Rouffet*, 149 F3d 1350, 47 USPQ2d 1453 (Fed. Cir. 1998). Here, the rejection depends on a combination of the Russell and the McConnell references. Thus, to set forth a *prima facie* showing of obviousness, the Examiner must identify “some teaching, suggestion, or motivation to combine the references.”

Not only did the Examiner fail to identify “some teaching, suggestion, or motivation to combine the references,” but as shown below, the cited Russell and McConnell references are inconsistent in at least two ways. First, Russell (according to the Examiner) uses a parallelogram linkage whereas McConnell uses a non-parallelogram linkage. Second, Russell maintains his tray at a substantially constant orientation relative to the horizon whereas McConnell changes his tray’s orientation relative to the horizon. These fundamental inconsistencies negate any teaching, suggestion, or motivation to combine the cited references. Therefore, the present rejection is improper and must be reversed.

The Examiner has acknowledged that the references are inconsistent. Specifically, the Examiner alleges that the device disclosed by the Russell patent is a parallelogram linkage. Office Communication at 6 (“a parallelogram linkage (Figs. 20-21)”). In marked contrast, the Examiner

recognizes that the device disclosed by the McConnell patent uses a non-parallelogram linkage. Office Communication at 8 (“providing a non-parallelogram linkage”).

Despite the acknowledged inconsistency between these two references, the Examiner alleges one of ordinary skill would have abandoned the advantages of the Russell patent to achieve the benefits of the claimed subject matter. However, the Examiner has not identified any objective teaching, suggestion, or motivation to make such a modification of the Russell patent. Rather, the Applicants respectfully submit, the only possible motivation is the Examiner’s unsupported assertion that one of ordinary skill would combine the references. That motivation, according to the Federal Circuit, is insufficient to overcome the inconsistencies between the references.

Specifically, Russell teaches a device that keeps the “support platform” horizontal throughout its range of motion. For instance, Fig. 7 of the Russell patent shows the “support platform” in its raised extreme position. In that raised extreme position, the “support platform” is in a horizontal position. Fig. 1 of the Russell patent shows the “support platform” in an intermediate position. In that intermediate position, the “support platform” is in a horizontal position. Fig. 2 of the Russell patent shows the “support platform” in its lowered extreme position. In that lowered extreme position, the “support platform” is in a horizontal position. In sum, the Russell patent teaches that the “support platform” is kept horizontal.

This constant horizontal position of the Russell patent “support platform” was known to be a desirable attribute of such devices because, among known advantages, it reduced the probability that the keyboard would fall off of the platform during operation of the mechanism. *See* U.S. Patent No. 4,616,798 to Smeenge *et al.* col. 5, lines 34 – 44.

In marked contrast to the constant horizontal position of the Russell patent support platform, the device of the McConnell patent changes the orientation of the platform as the platform is raised or lowered. *E.g., compare* Fig. 2 of the McConnell patent *with* its Fig. 3.

Because of the inconsistencies between the Russell and the McConnell references, one cannot predict the orientation of the platform (in the lowered position) in the Examiner's combination. Indeed, the Examiner's failure to explain how her proposed combination would work is telling. She cannot explain how it would work because neither of the references provides any hint to how her amalgamation of these two inconsistent devices would work. Because the Russell and McConnell references are inconsistent, they cannot be combined to reject the claimed subject matter under 35 U.S.C. § 103. For this reason alone, the present rejection must be reversed.

*The Examiner has not identified what parts of which  
references are combined*

In addition to the inconsistencies between the Russell and the McConnell patents, it is not clear what parts of the Russell patent the Examiner would combine with what parts of the McConnell patent. For instance, while the Examiner is correct some of the embodiments of the Russell patent have "a lower link/bar/side arm (15)", the Examiner ignores the embodiments of Russell Figs. 1 – 10 that do not have a lower link of the type shown in Figs. 20 -21. Moreover, the Examiner has not articulated any reason why one of ordinary skill would have selected only the latter embodiments shown in Russell. This lack of a teaching to choose the appropriate teaching of Russell illustrates the hindsight nature of the present rejection. As a result, the present rejection is improper and must be reversed.

Indeed, it is unclear what the combination of Russell and McConnell would look like, or what functions it might accomplish. The Examiner asserts that the rotation of the keyboard tray provided by

McConnell provides the motivation to combine the references. Office Communication at 8. However, the Examiner has not shown that the claimed subject matter “provide[s] for effective clockwise movement of the shelf bracket as the linkage is moved to a storage position” (the alleged benefit of McConnell). Indeed, the Applicants respectfully submit that the claimed subject matter does not rotate the shelf in the manner described by McConnell. Rather, the claimed subject matter, notwithstanding its non-parallelogram linkage, behaves more like a parallelogram linkage than a McConnell type non-parallelogram linkage. Specifically, while the claimed subject matter employs a non-parallelogram linkage, the claimed subject matter positions the tray in substantially the same orientation before and after any height adjustment. In other words, the result of the Examiner’s alleged combination of references leads to something other than the claimed subject matter. For this reason alone, the present rejection must be reversed.

*There is no objected basis to combine Russell and McConnell*

The Examiner has not identified any objective evidence that teaches or suggests combining the Russell and McConnell patents. Indeed, neither the Russell patent nor the McConnell patent provides any guidance as to what parts one of ordinary skill should pick from one patent to combine with what part of the other to make the claimed subject matter. Instead, the Examiner has relied upon the road map provided by the rejected claims. That however is hindsight, which is an improper basis for a rejection under 35 U.S.C. § 103.

“Where [as here] an invention is contended to be obvious based upon a combination of elements across different references, our cases require that there be a suggestion, motivation or teaching to those skilled in the art for such a combination.” *Iron Grip Barbell Co. v. USA Sports Inc.* 392 F3d 1317, 73

U.S.P.Q.2d 1225 (Fed. Cir. 2004) *citing In re Fine*, 837 F.2d 1071, 1074, 5 U.S.P.Q.2d 1596 (Fed. Cir. 1988). As the Examiner has not identified any such teaching or suggestion, the rejection is improper and must be reversed.

In contrast to the absence of a reason to combine the Russell and McConnell patents, the Applicants provided several reasons why one of ordinary skill in the art would not have combined these references. For instance, the combination reduces the utility of the device, the combination would create a restriction in the knee hole, and the Examiner's proposed combination negates the objective of the Russell patent. However, the Examiner has not provided any rationale for why these reasons do not prevent combining these references.

In particular, McConnell describes a device with a limited utility, and as a result, any combination based upon this reference has a limited utility. The device of the McConnell patent rotates its support platform when the platform is lowered. Because of this rotation, the McConnell patent device may not be useful when in any position other than its fully raised position.

For instance, a person who has his (or her) chair lowered may wish to use the device at the height of the fully lowered (but not retracted) device. However, because of the angled position of the support platform in that lowered position, the keyboard on a McConnell type device may not be unusable in the fully lowered device. As this reduces the utility of the alleged combination, the Applicants respectfully submit that this disadvantage negates any motivation to combine the Russell and McConnell references.

The device described by the McConnell patent creates a knee hole obstacle. For instance, when the device described by McConnell in its retracted position, *see e.g.* Fig. 2 of the McConnell patent, the support platform is rotated in the knee hole. Alternatively, when the device described in the McConnell patent is in the extended position, it has a large metal bracket under the support platform and in the knee

hole. *See* Fig. 5. In either case, the device described by the McConnell patent was a device to be avoided and not emulated.

Moreover, the Examiner's proposed modification of the device of the Russell patent, changing the parallelogram linkage a non-parallelogram linkage, renders the device of the Russell patent not suitable for its intended purpose –

supporting a support platform for movement relative to a base in a generally parallel orientation through a plurality of positions.

Abstract of the Russell patent (emphasis added).

Because the asserted modification of the primary reference, Russell, renders the device unable to perform its intended function as it would here, namely of maintaining the horizontal position of the support platform, then combining it with the modifying reference, McConnell, that teaches away from the primary reference cannot be the basis of a *prima facie* showing of obviousness under 35 U.S.C. § 103. *E.g., Tec Air, Inc. v. Denso Mfg. Mich. Inc.*, 192 F.3d 1353, 52 U.S.P.Q.2d 1294 (Fed. Cir. 1999). For this further reasoning, the present rejection is improper and must be reversed.

For any of the above-stated reasons, the present rejection lacks a proper basis and must be reversed.

*The Examiner has not shown that there was a motivation to make the asserted modification of the cited references*

One requirement for a rejection under 35 U.S.C. § 103 based on a combination of references is that there must be a motivation to make the asserted modification of the cited references. *In re Rouffet*, 149 F.3d 1350, 1355, 47 USPQ2d 1453 (Fed. Cir. 1998) (“When a rejection depends on a combination of prior art references, there must be some teaching, suggestion, or motivation to combine the

references.”). The only proffer made in the present rejection is the bald, conclusory statement that it would have been obvious to make the claimed subject matter. That is an insufficient for the present rejection. Therefore, for this further reason, the present rejection must be reversed.

The Applicants further submit that the non-parallelogram linkage of McConnell is unlike the non-parallelogram linkage of the claimed subject matter. McConnell’s linkage has (1) a bracket member for connecting the device to a desk; (2) a shelf bracket; and (3) two links, each with one end attached by a fixed pivot point on the bracket member and the other end attached by a fixed pivot point to the shelf bracket. *See* Figs. 2 and 3 of McConnell. In marked contrast, the non-parallelogram linkage of the subject matter of, for instance claim 25, has “side arm can be pivoted relative to the mounting bracket about the fourth point and can be reciprocatingly moved relative to the fourth point”.

For each of the above-stated reasons, and others, the Examiner has not established a *prima facie* showing that the Russell patent can be combined – under the standard of 35 U.S.C. § 103 -- with the McConnell patent to arrive at the claimed subject matter. In other words, the present rejection is improper and must be reversed.

b. Russell in view of Watt

As noted above, the Examiner rejected Claims 65-69 and 73 as obvious over Russell in view of Watt. Moreover, the Examiner maintained these grounds of rejection in the Advisory Action of April 20, 2005.

The Applicants respectfully submit that the Examiner has not set forth a *prima facie* showing that the subject matter of these claims is obvious. Specifically, the Examiner has not identified an objective basis for combining the references. Therefore, this rejection must be reversed.



The Examiner acknowledges that the Russell patent “does not teach the shelf bracket (14) being pivotally connected to the front portion of the first/upper arm (16) by at least one pivot positioned above a shelving surface (at 14)”. Office Communication at 15. However, the Examiner asserts that Watt teaches a pivot connection above the shelving surface. *Id.* Therefore, the Examiner concludes “[i]t would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the articulating arm mechanism of Russell by providing a pivot connection between the first/upper arm and the shelf bracket located above the shelving surface as an alternative means for pivotally supporting the shelf bracket and as taught by Watt.” *Id.* In other words, the Examiner is offering another serving of scrambled references.

However, the Examiner has not articulated any rational why one of ordinary skill would have made such a modification of the Russell patent. Nor has the Examiner identified which of the nine embodiments of the Russell patent the ordinarily skilled artisan would have chosen to modify in this manner. Rather, once again, the rejection looks and feels like hindsight where the rejected claims are the only road map for arriving at the claimed subject matter.

Furthermore, the Watt patent clearly shows that the bracket attached to the auxiliary shelf does so at the exterior of the shelf. In contrast, the subject matter of rejected Claim 65 calls for the bracket “to be mounted away from the outer side edges of the auxiliary shelf”. Thus, for this further reason, the cited references teach away from the claimed subject matter, and do not render it obvious. Therefore, when the claimed invention as a whole is considered, the Examiner has not set forth a *prima facie* showing of obviousness. The rejection is improper and must be reversed.

As previously noted above, use of the rejected claims to guide the combination of elements to arrive at the claimed subject matter does not constitute a *prima facie* showing of obviousness. Here, the

only road map for combining the elements from the prior art is the claim subject matter. Therefore, the rejection is improper and must be reversed.

Because the Examiner has not identified any objective teaching that would have lead one of ordinary skill to combine any embodiment of Russell with Watt, this rejection is improper and must be reversed.

c. Russell in view of Watt and further in view of McConnell

As noted above, the Examiner rejected Claims 70-72 and 74-82 as obvious over Russell in view of Watt in further view of McConnell.

The Applicants respectfully submit that the Examiner has not set forth a *prima facie* showing that the subject matter of these claims is obvious. Therefore, this rejection must be reversed.

In addition to the fundamental problems of combining Russell with Watt mentioned above, the addition of the McConnell patent further renders the combination untenable. For instance, as the Examiner noted, McConnell rotates his shelf bracket when he lowers his device. Office Communication at 13 and 16. By rotating the shelf bracket, McConnell increases the distance between the height (from the floor) of the front end of the keyboard platform and the bottom of the shelf bracket. If one were to rotate the shelf bracket of Watt in this fashion, it is not clear that the rotated bracket and shelf platform would fit within storage box 12 (shown in Fig. 1 of Watt). In other words, the cited references are inconsistent and cannot be combined under the standard of 35 U.S.C. § 103 to support a rejection. Therefore the present rejection is improper and must be reversed.

Furthermore, the Examiner alleges that one of ordinary skill would add a swivel mechanism (ala McConnell) to the structure formed by scrambling Russell with Watt. The Applicants respectfully submit that while the device of McConnell can accommodate such a swivel mechanism, the device of Watt probably may not. Rather, if Watt were swiveled, the Applicants submit it would produce a

substantial torque component that could break the mechanism. In other words, there is a substantial likelihood that the combination advocated by the Examiner would not be successful in its intended purpose. For this further reason, the present rejection is improper and must be reversed.

In sum, the Examiner has not provided objective evidence of a teaching, suggestion, or motivation to combine the cited references. *In re Rouffet*, 149 F3d 1350, 47 USPQ2d 1453 (Fed. Cir. 1998) (such evidence is a necessary component of every obviousness rejection). Indeed, it is unclear as to what the Examiner proposes should be taken from Russell, what from Watt and what from McConnell and how the several teachings should be combined. In other words, the Examiner has not made a *prima facie* showing that the claimed subject matter is obvious. Therefore the present rejection must be reversed.

d. Watt in view of McConnell

As noted above, the Examiner rejected Claims 90 and 93 as obvious over Watt in view of McConnell.

The Applicants respectfully submit that the Examiner has not set forth a *prima facie* showing that the subject matter of these claims is obvious. Therefore, this rejection must be reversed.

This set of scrambled references combines the parallelogram linkages of Watt (*e.g.*, col. 3, lines 64-67) with the non-parallelogram linkage of McConnell. As noted above, parallelogram linkages provide for a constant positioning of the platform whereas the non-parallelogram linkage of McConnell rotates the platform as it is raised or lowered. Thus, for this reason alone, the two references are inconsistent and cannot be combined to form a proper basis for a rejection of the claimed subject matter as obvious. Therefore, this rejection must be reversed.

The Applicants also note that McConnell discloses the use of cross-plate 62. *E.g.*, Fig. 6. Those of ordinary skill in the art know that articulated arm mechanisms with a cross-plate generally are

relatively narrow – *i.e.*, the arm attaches to the shelf bracket away from the lateral edges of the keyboard platform. *See* U.S. Patent No. 4,616,798 to Smeenge *et al.* In marked contrast, the shelf bracket of the Watt device attaches to the articulated arms at the lateral edges of the keyboard platform. Fig. 3. Thus, the disclosure of these references is inconsistent as to the width of the shelf bracket and where the articulating arm attaches to the shelf bracket.

However, none of the cited references provides one of ordinary skill with guidance as to what part(s) of Watt should be scrambled with what part(s) of McConnell. Rather, the only road map for picking non-parallelogram arms and a narrow shelf bracket with articulating arms attaching to the shelf bracket away from the lateral edges of the keyboard being the rejected claims. That is hindsight and not a proper basis for rejecting the claim as obvious. Therefore the present rejection must be reversed.

e. Unaddressed Secondary Considerations

As indicated above, the Applicants respectfully submit that they were the first to combine a shelf bracket that attaches to a linkage arm at a point above the top of the shelf with linkage arm(s) –shelf connection positioned away from the left and right side edges of the shelf. They filed their first patent application describing this invention in 1997 (60/040,972 on March 12, 1997) and introduced their product at the main 1997 Office Furniture and Furnishings Trade Show, Neocon. At the 1997 Neocon trade show, their product was awarded a silver metal for its innovative design.<sup>7</sup>

Subsequently, about half of all new keyboard support mechanisms for which patent applications were filed copied the Applicants' innovative design. For instance, of the twenty-four U.S. patents and patent applications which were filed after the Applicants March 12, 1997 initial filing, and which patents

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<sup>7</sup> These facts are of record. *See* the October 13, 2004 Amendment at 28-29.

and patent applications were cited by the Examiner on her July 28<sup>th</sup>, 2004 List of References Cited, eleven use the Applicant's innovation. In marked contrast, the Applicants respectfully submit that none of the References Cited by the Examiner with a filing date prior to the Applicants March 12, 1997 initial filing discloses a device in which the shelf-linkage attachment point is both away from the left and right edges and above the shelf surface.

Reference	the shelf-linkage attachment point is away from the left and right edges	shelf-linkage attachment point is above the shelf surface	BOTH
5,924,666 <sup>8</sup>	<i>See e.g.</i> , Fig. 2.	<i>See e.g.</i> , Fig. 2.	+
6,021,985	<i>See e.g.</i> , Fig. 2.	<i>See e.g.</i> , Fig. 2.	+
6,148,739	<i>See e.g.</i> , Fig. 11	<i>See e.g.</i> , Fig. 11	+
6,176,456	<i>See e.g.</i> , Fig. 1.	<i>See e.g.</i> , Fig. 1.	+
6,186,460		NO	-
6,199,809		NO	-
6,227,508	<i>See e.g.</i> , Fig. 1.	<i>See e.g.</i> , Fig. 1.	+
6,270,047	<i>See e.g.</i> , Fig. 6A.	<i>See e.g.</i> , Fig. 1.	+
6,273,382	NO	NO	-
6,322,031		NO	-
6,336,617	<i>See e.g.</i> , Fig. 5.	<i>E.g.</i> , Fig. 6.	+

<sup>8</sup> As indicated in the assignment records of U.S. Patent No. 5,924,666, a court found that this patent is based upon a misappropriation of the Applicants' Assignee's trade secrets.

Reference	the shelf-linkage attachment point is away from the left and right edges	shelf-linkage attachment point is above the shelf surface	BOTH
6,336,618	<i>E.g.</i> , Fig. 1.	NO	—
6,343,775		NO	—
Application 20020033435		NO	—
Application 20020043601	<i>E.g.</i> , Fig. 1.	NO	—
6,397,763	<i>See e.g.</i> , Fig. 1.	<i>E.g.</i> , Figs. 11 a-c.	+
6,398,176		NO	—
6,409,127	<i>See e.g.</i> , Fig. 10.	NO	—
6,450,467	<i>E.g.</i> , Fig. 1.	<i>E.g.</i> , Fig. 6.	+
6,460,816		NO	—
6,478,279		NO	—
6,481,683	<i>E.g.</i> , Fig. 1.	<i>E.g.</i> , Fig. 16.	+
6,488,248		NO	—
Application 20010035482	<i>E.g.</i> , Fig. 1.	<i>E.g.</i> , Fig. 3.	+

“In determining the question of obviousness, inquiry should always be made into whatever objective evidence of nonobviousness there may be.” *Connell v. Sears Roebuck & Co.*, 722 F.2d 1542, 1549, 220 USPQ 193, 199 (Fed. Cir. 1983). “The copying of an invention may constitute evidence that the invention is not an obvious one.” *Troy Co. v. Products Research Co.*, 339 F.2d 364, 367, 144 USPQ 51, 53 (9th Cir. 1964), *cert. dismissed*, 381 U.S. 930, 145 USPQ 743 (1965).

Here, the Examiner has not given due consideration to the secondary indicia of nonobviousness. Specifically, the Examiner has not given due consideration to the recognition by those of ordinary skill that the Applicants claimed subject matter was a significant innovation (a silver metalist). Nor has the Examiner given due consideration to choice by those of ordinary skill to make the Applicants' innovation a new standard.

While the Applicants respectfully submit that the secondary considerations of record clearly rebut any alleged showing of obviousness, that result is not necessary here. Rather, the Examiner's failure to give due consideration to the evidence of record of secondary considerations, alone, mandates that the present obviousness rejections should be remanded to the Examiner with instructions to give this evidence due consideration.

8. ***Claims Appendix.***

1. An improved auxiliary shelf mechanism for vertically and horizontally positioning an auxiliary shelf, including a means for attaching the auxiliary shelf to a desk so that the auxiliary shelf may be movably positioned relative to the desk, wherein the improvement comprises: an articulating arm mechanism comprising: (a) a mounting bracket, the mounting bracket having a front end and a back end, the front end, when attached to a desk, is closer to the front of the desk than the back end; (b) an upper arm having a rear end and a front end, the upper arm being pivotally connected to the mounting bracket at a first point, the rear of the upper arm being defined as the end of the upper arm closest to the mounting bracket and the front end being defined as the end opposite the rear end point; (c) a shelf bracket pivotally connected to the upper arm at a second point; (d) a side arm having a front end and a rear end, the side arm being pivotally connected to the shelf bracket at a third point; the side arm being further attached to the mounting bracket at a fourth point; the side arm having within it a first opening such that the side arm can be pivoted relative to the mounting bracket about the fourth point and can be reciprocatingly moved relative to the fourth point; the front of the side arm being defined as the end closest to the third point, and the rear of the side arm being defined as the end opposite from the front; (e) a stopping means, the stopping means having a first side facing towards the rear of the side arm, such that when the side arm moves laterally relative to the fourth point, the rear of the side arm can contact the first side of the stopping means; wherein the side arm and the upper arm are not substantially parallel to each other.

2. The auxiliary shelf mechanism of claim 1, wherein the third point is disposed beneath the second point.

3. The auxiliary shelf mechanism of claim 1, wherein the fourth point is disposed beneath the first point.

4. The auxiliary shelf mechanism of claim 1, wherein the fourth point is disposed beneath the first point, and the third point is disposed beneath the second pivot point.



5. The auxiliary shelf mechanism of claim 1, wherein the first side of the stopping means is concave.

6. The auxiliary shelf mechanism of claim 1, wherein the distance between said first and fourth points is less than the distance between said second and third points.

7. The auxiliary shelf mechanism of claim 1, wherein the fourth point is disposed beneath the first point, and the third point is disposed beneath the second pivot point, and the first side of the stopping means is concave.

8. The auxiliary shelf mechanism of claim 1, wherein the articulating arm mechanism further comprises a lower arm, the lower arm being pivotally attached to the upper arm at a fifth point, the fifth point being disposed between the first and second points, the lower arm being further attached to the mounting bracket at the fourth point, the lower arm further having within it a second opening, such that the lower arm can pivot about the fourth point and can be reciprocatingly moved relative to the fourth point.

9. The auxiliary shelf mechanism of claim 1, wherein the articulating arm mechanism further comprises a second side arm and second stopping means, said second stopping means comprising a first side face, wherein the rear of said second side arm can contact the first side face of said second stopping means.

10. The auxiliary shelf mechanism of claim 9, wherein the two stopping means are connected to each other.

11. The auxiliary shelf mechanism of claim 1, wherein the position of the stopping means is adjustable between a first position and a second position, the first position being closer to the front end of the mounting bracket than the second position, and the second position being closer to the back end of the mounting bracket than the first position.

12. The auxiliary shelf mechanism of claim 11, wherein the position of the stopping means can be fixed at either the first position, or the second position, or at any position between the first and second positions.

13. The auxiliary shelf mechanism of claim 1, wherein the upper arm is connected to the mounting bracket by a first pivot rod at the first point, and to the shelf bracket by a second pivot rod at the second point, and further wherein the side arm is connected to the shelf bracket by a third pivot rod at the third point, and to the mounting bracket by a bolt at the fourth point.

14. The auxiliary shelf mechanism of claim 1 further comprising a fixing means for temporarily fixing the side arm to the mounting bracket.

15. The auxiliary shelf mechanism of claim 14, wherein the sidearm may be fixed into position relative to the mounting bracket with a locking mechanism.

16. The auxiliary shelf mechanism of claim 15 further comprising a locking knob that fixes the position of the side arm relative to the mounting bracket.

17. The auxiliary shelf mechanism of claim 16, further comprising a stopping means effective to apply friction between the rear end of the side arm and first side of the stopping means.

18. The auxiliary shelf mechanism of claim 1, wherein the side arm is fixed into position by means of interaction between interconnecting projections on the rear end of the side arm and the first side of the stopping means.

19. The auxiliary shelf mechanism of claim 1, wherein said stopping means is attached to an inside face of the mounting bracket, and further wherein the first side of said stopping means is angled outwards towards the inside face of the mounting bracket to which the stopping means is attached.

20. The auxiliary shelf mechanism of claim 1, wherein the rear end of the side arm and the first side of the stopping means comprises a complementary series of interlocking teeth.

21. The auxiliary shelf mechanism of claim 5, wherein the rear end of the side arm consists of a side-arm cam pivotally connected to the rear end of the side arm, the sidearm cam having a convex face which complements the first side of the stopping means.

22. The auxiliary shelf mechanism of claim 1, wherein the articulating arm mechanism further comprises means for rotating it about a vertical axis.

23. The auxiliary shelf mechanism of claim 22, wherein the means for attaching the auxiliary shelf to a desk comprises a mounting track; the means for rotating the articulating arm mechanism relative to the desk comprises a swivel mechanism attached to the mounting bracket in combination with the mounting track to which the mounting bracket is slidably connected, either directly or indirectly.

24. The auxiliary shelf mechanism of claim 1, wherein the articulating arm mechanism further comprises: (a) a second side arm; (b) a second stopping means; and further wherein; (c) the first side of each stopping means is concave; (d) each stopping means is attached to an inside side of the mounting bracket, and further wherein the first side of each stopping means is angled outwards towards the inside face of the mounting bracket to which each stopping means is attached so that the end of each side arm can contact a stopping means and an inside face of the mounting bracket simultaneously; (e) the fourth point is disposed beneath the first point, and the third point is disposed beneath the second point; (f) the articulating arm mechanism may be rotated relative to the desk by means of a swivel mechanism attached to the mounting bracket in combination with a mounting track to which the mounting bracket is slidably connected.

25. An articulating arm mechanism for connecting a shelf to a desk comprising: (a) a mounting bracket, the mounting bracket having a front end and a back end; (b) an upper arm having a rear end and a front end, said upper arm being pivotally connected to the mounting bracket at a first point, the rear of the upper arm being defined as the end of the upper arm closest to the mounting

bracket and the front being defined as the end opposite the rear end; (c) a shelf bracket pivotally connected to the upper arm at a second point; (d) a side arm having a front end and a rear end, said side arm being pivotally connected to the shelf bracket at a third point; the side arm being further attached to the mounting bracket at a fourth point; the side arm having within it a first opening such that the side arm can be pivoted relative to the mounting bracket about the fourth point and can be reciprocatingly moved relative to the fourth point; the front of the side arm being defined as the end closest to the third point, and the rear of the side arm being defined as the end opposite from the front; (e) a stopping means, the stopping means having a first side facing towards the rear of the side arm, such that when the side arm moves laterally relative to the fourth point is the rear of the side arm can contact the first side of the stopping means; wherein the side arm and the upper arm are substantially not parallel to each other.

26. The articulating arm mechanism of claim 25, wherein the third point is disposed beneath the second pivot point.

27. The articulating arm mechanism of claim 25, wherein the fourth point is disposed beneath the first pivot point.

28. The articulating arm mechanism of claim 25, wherein the fourth point is disposed beneath the first point, and the third point is disposed beneath the second point.

29. The articulating arm mechanism of claim 25, wherein the first side of the stopping means is concave.

30. The articulating arm mechanism of claim 25, wherein the distance between the first and fourth points is less than the distance between the second and third points.

32. The articulating arm mechanism of claim 25, wherein the articulating arm mechanism has two side arms and two stopping means, wherein the rear of each sidearm can contact the first face of its corresponding stopping means.

33. The articulating arm mechanism of claim 32, wherein the two stopping means are connected to each other.

34. The articulating arm mechanism of claim 33, wherein at least one of the first sides of each stopping means is concave.

35. The articulating arm mechanism of claim 25, wherein the upper arm is connected to the mounting bracket by a first pivot rod and to the shelf bracket by a second pivot rod, and further wherein the side arm is connected to the shelf bracket by a third pivot rod and to the mounting bracket by a bolt.

36. The articulating arm mechanism of claim 25, further comprising a fixing means connecting the side arm to the mounting bracket.

37. The articulating arm mechanism of claim 36, wherein the side arm may be fixed into position with a locking means.

38. The articulating arm mechanism of claim 37, wherein the locking means is a locking knob.

39. The articulating arm mechanism of claim 25, wherein the side arm is fixed into position by means of friction between the end of the side arm and the first face of stopping means.

40. The articulating arm mechanism of claim 25, wherein the side arm is fixed into position by means of interaction between interconnecting projections on the end of the side arm and the first face of the stopping means.

41. The articulating arm mechanism of claim 25, wherein at least one stopping means is attached to an inside face of the mounting bracket, and further wherein the concave face of at least one

stopping means is angled outwards towards the inside face of the mounting bracket to which the stopping means is attached.

42. The articulating arm mechanism of claim 25, wherein the rear end of the side arm and the concave face of the stopping means comprise complementary series of interlocking teeth.

43. The articulating arm mechanism of claim 29, wherein the rear end of the side arm consists of a side-arm cam pivotally connected to the end of the side arm, the side-arm cam having a convex face which complements the first face of the stopping means with which it comes in contact.

44. The articulating arm mechanism of claim 25, wherein the articulating arm mechanism further comprises a means for rotating it relative to the desk.

45. The articulating arm mechanism of claim 44, wherein the means for rotating it relative to the desk comprises a swivel mechanism attached to the mounting bracket.

46. The articulating arm mechanism of claim 25, wherein: (a) there are two side arms; (b) there are two stopping means, optionally connected to one another; (c) the first face of each stopping means is concave; (d) each stopping means is attached to an inside face of the mounting bracket, and further wherein the first face of each stopping means is angled outward towards the inside face of the mounting bracket to which each stopping means is attached so that the end of each side arm can contact a stopping means and the inside face of the mounting bracket simultaneously (e) the fourth point is disposed beneath the first point, and the third point is disposed beneath the second point; and (f) the articulating arm mechanism may be rotated relative to the desk by means of a swivel mechanism attached to the mounting bracket in combination with a mounting track to which the mounting bracket is slidably connected, either directly or indirectly.

47. An articulating arm mechanism for connecting a shelf to a desk comprising: (a) a mounting bracket, the mounting bracket having a front end and a back end, the front end being closer to the front of the desk than the back end; (b) an upper arm pivotally connected to the mounting bracket at

a first point, the rear of the upper arm being defined as the end of the upper arm closest to the mounting bracket; (c) a shelf bracket pivotally connected to the upper arm at a second point; the front of the upper arm being defined as the end of the upper arm closest to the shelf bracket; (d) a side arm pivotally connected to the shelf bracket at a third point; the side arm being further attached to the mounting bracket at a fourth point; the side arm having within it a first opening such that the side arm can be moved both pivotally and reciprocatingly about the fourth point; the front of the side arm being defined as the end closest to the third point, and the rear of the side arm being defined as the end opposite from the front; (e) a stopping means, the stopping means having a first side facing towards the rear of the side arm, such that when the side arm moves horizontally relative to the fourth point, the rear of the side arm can contact the first side of the stopping means; wherein the side arm and the upper arm are not parallel to each other; and further wherein the position of the stopping means is such that regardless of the angle of the side arm to the horizon, the angle of the shelf bracket relative to horizontal remains constant.

48. An improved auxiliary shelf mechanism including an auxiliary shelf having a top surface, a bottom surface, and a linkage to attach the auxiliary shelf to a desk so that the auxiliary shelf may be moved horizontally and/or vertically relative to the desk, wherein the improvement comprises:

- a. attaching the linkage to the auxiliary shelf at a substantially interior point of said auxiliary shelf removed from the side edges of said auxiliary shelf; and
- b. attaching the linkage to the auxiliary shelf so that there is a linkage-auxiliary shelf connection point above the top surface of the auxiliary shelf.

49. The auxiliary shelf mechanism of claim 48, wherein the linkage is a parallelogram linkage.

50. A mechanism for mounting a support for an art device on a base, comprising: (a) a mounting member for attachment to said base; (b) a linkage having a first end for mounting said support and a second end pivotally connected to said mounting member for permitting vertical movement of said support relative to said mounting member between lower and upper positions, said linkage including: (i) an upper link; (ii) a lower link; (iii) a first end link attached to said support; (iv) a second end link for attachment to said base; (v) a plurality of pin joints; and (vi) a crank and slider type joint; wherein one of

said upper and lower links is coupled to said first and second end links by pin joints at each end and the other of said upper and lower links is coupled to said first and second end links at one end by a pin joint and at the other end by said crank and slider joint; and (c) a stopping means for releasably restraining said support in a desired position intermediate to said lower and upper positions comprising: (i) an extension of said link having a crank and slider joint having a first engagement surface; and (ii) a second engagement surface affixed to either said base or support.

51. A mechanism according to claim 50, wherein said first and second engagement surfaces frictionally engage.

52. A mechanism according to claim 50, wherein said first and second surfaces are serrated.

53. A mechanism according to claim 50, wherein said link has a crank and slider joint is said lower link.

54. A mechanism according to claim 53, wherein a coil spring is carried by the pin joint coupling said upper link to said second end link and has opposite ends arranged to engage said upper link and said mounting member.

55. A mechanism according to claim 53, wherein the force of gravity tends to swing said linkage downwardly about the pin joint coupling said upper link to said second end link to force said first engagement surface into engagement with said second engagement surface.

56. A mechanism according to claim 50 in which said art device consists essentially of a keyboard.

57. An improved auxiliary shelf mechanism for positioning an auxiliary shelf, including a means for attaching the auxiliary shelf to a desk so that the auxiliary shelf may be movably positioned relative to the desk, wherein the improvement comprises: an articulating arm mechanism comprising: a) a mounting bracket, the mounting bracket having a front end and a back end; b) a first arm having a rear



portion and a front portion, the rear portion of the first arm being pivotally connected to the mounting bracket; c) a shelf bracket connected to the front portion of the first arm; d) a second arm having a front portion and a rear portion, the front portion of the second arm is pivotally connected to the shelf bracket and the rear portion of the second arm being slidably connected to the mounting bracket; and e) a stopping surface associated with the mounting bracket such that movement of the second arm is restricted when the second arm is translated; wherein the first and second arms are not parallel to each other.

58. The auxiliary shelf mechanism of claim 57, wherein the first arm is connected to the mounting bracket by a first pivot and to the shelf bracket by a second pivot and further wherein the second arm is connected to the shelf bracket by a third pivot and to the mounting bracket by a sliding joint.

59. The auxiliary shelf mechanism of claim 57, wherein movement of the second arm is restricted by friction between the rear portion of the second arm and the stopping surface.

60. The auxiliary shelf mechanism of claim 57, wherein the second arm is fixed into position by engaging interconnecting projections on the rear portion of the second arm and the stopping surface.

61. The auxiliary shelf mechanism of claim 57, wherein the rear portion of the second arm and the stopping member comprise complementary series of interlocking teeth.

62. The auxiliary shelf mechanism of claim 57, wherein the articulating arm mechanism further comprises means for rotating said mechanism relative to the desk.

63. The auxiliary shelf mechanism of claim 57, wherein the means for attaching the auxiliary shelf to the desk comprises a mounting track; a means for rotating the articulating arm mechanism relative to the desk comprises a swivel mechanism attached to the mounting bracket in combination with the mounting track to which the mounting bracket is slidably connected.

64. The auxiliary shelf mechanism of claim 57, further comprising a spring for biasing either the first or second arm.

65. An improved auxiliary shelf mechanism for positioning an auxiliary shelf including a means for attaching the auxiliary shelf to a desk so that the auxiliary shelf may be movably positioned relative to the desk, wherein the improvement comprises: an articulating arm mechanism comprising: (a) a mounting bracket, the mounting bracket having a front end and a back end; (b) a first arm having a rear portion and a front portion, the rear portion of the first arm being pivotally connected to the mounting bracket; (c) a shelf bracket adapted to be mounted to the under surface of said auxiliary shelf and away from the outer side edges of said auxiliary shelf, said shelf bracket is pivotally connected to the front portion of the first arm by at least one pivot positioned above the upper surface of said shelf; (d) a second arm having a front portion and a rear portion, the front portion of the second arm being pivotally connected to the shelf bracket and the rear portion of the second arm being connected to the mounting bracket; and (e) a stopping surface being associated with the mounting bracket such that movement of the second arm is restricted when the second arm is translated.

66. The auxiliary shelf mechanism of claim 65, wherein the first arm is connected to the mounting bracket by a first pivot and to the shelf bracket by a second pivot and further wherein the second arm is connected to the shelf bracket by a third pivot and to the mounting bracket by a sliding joint.

67. The auxiliary shelf mechanism of claim 65, wherein movement of the second arm is restricted by friction between the rear portion of the second arm and the stopping surface.

68. The auxiliary shelf mechanism of claim 65, wherein the second arm is fixed into position by engaging interconnecting projections on the rear portion of the second arm and the stopping surface.

69. The auxiliary shelf mechanism of claim 65, wherein the rear portion of the second arm and the stopping surface comprise complementary series of interlocking teeth.

70. The auxiliary shelf mechanism of claim 65, wherein the articulating arm mechanism further comprises means for rotating said mechanism relative to the desk.

71. The auxiliary shelf mechanism of claim 65, wherein the means for attaching the auxiliary shelf to the desk comprises a mounting track; a means for rotating the articulating arm mechanism relative to the desk comprises a swivel mechanism attached to the mounting bracket in combination with the mounting track to which the mounting bracket is slidably connected.

72. The auxiliary shelf mechanism of claim 65, wherein the first and second arms are not parallel to each other.

73. The auxiliary shelf mechanism of claim 65, wherein the first and second arms are parallel to each other.

74. The auxiliary shelf mechanism of claim 65, further comprising a spring for biasing either the first or second arms.

75. An improved auxiliary shelf mechanism for positioning an auxiliary shelf, including a means for attaching the auxiliary shelf to a desk so that the auxiliary shelf may be movably positioned relative to the desk, wherein the improvement comprises: an articulating arm mechanism comprising: (a) a mounting bracket, the mounting bracket having a front end and a back end; (b) a first arm having a rear portion and a front portion, the rear portion of the first arm being pivotally connected to the mounting bracket; (c) a shelf bracket having a shelving surface for positioning a keyboard on top thereof, the shelf bracket being pivotally connected to the front portion of the first arm by at least one pivot positioned above the shelving surface; (d) a second arm having a front portion and a rear portion, the front portion of the second arm being pivotally connected to the shelf bracket and the rear portion of the second arm being connected to the mounting bracket; (e) a stopping surface being associated with the mounting bracket such that movement of the second arm is restricted by the stopping surface when the second arm is translated; (f) said means for attaching the auxiliary shelf to the desk comprises a mounting track; a swivel mechanism associated with the mounting bracket for rotating the articulating

arm mechanism relative to the desk; the swivel mechanism positioned in combination with the mounting track to which the mounting bracket is slidably connected; and (g) a spring for biasing the first or second arm.

76. The auxiliary shelf mechanism of claim 75, wherein the first arm being connected to the mounting bracket by a first pivot and to the shelf bracket by a second pivot and further wherein the second arm is connected to the shelf bracket by a third pivot and to the mounting bracket by a fourth pivot.

77. An improved auxiliary shelf mechanism for positioning an auxiliary shelf, including a means for attaching the auxiliary shelf to a desk so that the auxiliary shelf may be movably positioned relative to the desk, wherein the improvement comprises: (a) an articulating arm mechanism comprising: a) a mounting bracket, the mounting bracket having a front end and a back end; b) a first arm having a rear portion and a front portion, the rear portion of the first arm being pivotally connected to the mounting bracket; c) a shelf bracket pivotally connected to the front portion of the first arm; d) a second arm having a front portion and a rear portion, the front portion of the second arm being pivotally connected to the shelf bracket and the rear portion of the second arm being connected to the mounting bracket; e) a stopping surface being associated with the mounting bracket such that movement of the second arm is restricted by the stopping surface when the second arm is translated; f) said means for attaching the auxiliary shelf to a desk comprises a mounting track; a means for rotating the articulating arm mechanism relative to the desk comprises a swivel mechanism attached to the mounting bracket in combination with the mounting track to which the mounting bracket is slidably connected; and g) a spring for biasing the first or second arms; wherein the first and second arms are not parallel to each other.

78. The auxiliary shelf mechanism of claim 77, wherein the first arm is connected to the shelf bracket by a first pivot rod and the second arm is connected to the shelf bracket by a second pivot rod.

79. The auxiliary shelf mechanism of claim 77, wherein movement of the second arm is restricted into position by friction between the rear portion of the second arm and the stopping surface.

80. An improved auxiliary shelf mechanism for positioning an auxiliary shelf, including a means for attaching the auxiliary shelf to a desk so that the auxiliary shelf may be movably positioned relative to the desk, wherein the improvement comprises: an articulating arm mechanism comprising: (a) a mounting bracket, the mounting bracket having a front end and a back end; (b) a first arm having a rear portion and a front portion, the rear portion of the first arm being pivotally connected to the mounting bracket; (c) a shelf bracket having a shelving surface for positioning a keyboard on top thereof, the shelf bracket being pivotally connected to the front portion of the first arm by at least one pivot positioned above the shelving surface; (d) a second arm having a front portion and a rear portion, the front portion of the second arm being pivotally connected to the shelf bracket and the rear portion of the second arm being connected to the mounting bracket; (e) a stopping surface associated with the mounting bracket such that movement of the second arm is restricted by the stopping surface when the second arm is translated; (f) said means for attaching the auxiliary shelf to a desk comprises a mounting track; a swivel mechanism associated with the mounting bracket for rotating the articulating arm mechanism relative to the desk; the swivel mechanism positioned in combination with the mounting track to which the mounting bracket is slidably connected; and (g) a spring for biasing either the first or second arm; wherein the first and second arms are not parallel to each other.

81. The auxiliary shelf mechanism of claim 80, wherein the first arm is connected to the mounting bracket by a first pivot rod and to the shelf bracket by a second pivot rod and further wherein the second arm is connected to the shelf bracket by a third pivot rod.

82. The auxiliary shelf mechanism of claim 80, wherein movement of the second arm is restricted by friction between the rear portion of the second arm and the stopping surface.

83. An improved auxiliary shelf mechanism for positioning an auxiliary shelf; said mechanism including at least two linkage arms connecting a mounting bracket capable of being connected to a desk and an auxiliary shelf bracket having a shelving surface for an auxiliary shelf wherein the improvement comprises (a) positioning said linkage arm--auxiliary shelf bracket connection

away from either of the lateral edges of said auxiliary shelf and (b) having at least one pivot connection between one of said linkage arms and the shelf bracket above the shelving surface.

84. A computer support arm assembly comprising, in combination: (i) a first bracket member for attachment to a work support; (ii) a second bracket member for support of a keyboard; (iii) a first linkage arm pivotally connected to the first bracket member at one end and to the second bracket member at its opposite end; (iv) a second linkage arm movably connected to the first bracket member at one end and to the second bracket member at its opposite end, the connection between said second linkage arm and one of said first and second bracket members is along an elongated connection path; and (v) a locking mechanism including an inclined surface on one of said bracket members and an engagement surface on said second linkage arm, said inclined surface and said engagement surface slidable with respect to each other and at least partially frictionally engagable to retain the second arm and engaged bracket member in a fixed orientation.

85. The auxiliary shelf mechanism of claim 1 wherein the second linkage arm includes a pivot pin at the end connected to the first linkage arm, said first arm including an arcuate guide slot for receipt of the pin, one of said pin or said second bracket member further including said first inclined surface for engagement with the other to lock the arms when the second bracket member is rotated about the axis connecting the second bracket member and first arm.

86. An improved auxiliary shelf mechanism including an auxiliary shelf having a top surface, a bottom surface, and two side edges, and a linkage to attach the auxiliary shelf to a desk so that the auxiliary shelf may be moved horizontally and/or vertically relative to the desk, wherein the improvement comprises attaching the linkage to the auxiliary shelf: (a) substantially away from the side edges of said auxiliary shelf; and (b) the connection points of said linkage to said auxiliary shelf mechanism are substantially above the bottom surface of the auxiliary shelf.

87. The improved auxiliary shelf mechanism of claim 86 in which said linkage attaches to said auxiliary shelf near the middle of said shelf.

89. A support arm assembly for a computer keyboard mounted on a work support comprising, in combination: a first bracket member for attachment to a work support; a second bracket member for attachment to a keyboard; a first arm with opposite ends pivotally connected to the first bracket member and second bracket member respectively; a second arm with opposite ends pivotally connected to the first bracket member and the second bracket member respectively; one of said pivotal connections of the second arm to one of the first and second bracket members including first and second slidably engaged wedge members affixed respectively to the said one of said bracket members and to the second arm, said first and second wedge members slidably engaged and having a first locked position compressing the bracket member and second arm together and a second unlocking position releasing compression of the bracket member and second arm.

90. An improved auxiliary shelf mechanism for positioning an auxiliary shelf; said mechanism including at least two linkage arms connecting a mounting bracket capable of being connected to a desk and an auxiliary shelf bracket having a shelving surface for an auxiliary shelf, wherein the improvement comprises having a non-parallelogram linkage with at least one pivot connection between one of said linkage arms and the shelf bracket above the shelving surface.

91. A mounting mechanism for mounting a support for an art device on a base, comprising: (a) a mounting member for attachment to said base; (b) a linkage having a first end for mounting said support and a second end pivotally connected to said mounting member for permitting vertical swinging movement of said support relative to said mounting member between lower and upper positions, (i) said linkage including an upper link, a lower link, a first end link, and first, second, and third pivot connections having parallel axes, wherein (1) said upper link has opposite ends pivotally coupled to said first end link and said mounting member by said first and second pivot connections; (2) one end of said lower link is pivotally coupled to said first end link by said third pivot connection, and (3) said second end of said linkage is pivotally connected to said mounting member solely by said second pivot connection; (ii) said linkage being a non-parallelogram linkage, and (c) a stopping means for releasably restraining said support in a desired position intermediate said lower and upper positions, (i) said stopping means including a first engagement surface on said linkage and a second engagement surface of said mounting member, said first engagement surface being normally gravitationally biased into

engagement with said second engagement surface for releasably restraining said support against downwardly directed vertical swinging movement, and (ii) said first engagement surface is released from engagement with said second engagement surface by applying an upwardly directed manual force to said support.

92. An improved auxiliary shelf mechanism including an auxiliary shelf having a top surface and a bottom surface, and a linkage to attach the auxiliary shelf to a desk so that the auxiliary shelf may be moved relative to the desk, wherein the improvement comprises attaching the linkage to the auxiliary shelf removed from the side edges of said auxiliary shelf: (a) at a substantially centralized point of said auxiliary shelf; and (b) above the bottom surface of the auxiliary shelf.

93. The improved auxiliary shelf mechanism of claim 83 in which said linkage is a non-parallellogram linkage.

94. The improved auxiliary shelf mechanism of claim 47 in which said linkage comprises an elongated downwardly opening channel-shaped member.

95. Apparatus for movably supporting a keyboard with respect to a workstation comprising: a) a keyboard support member having a generally planar keyboard support surface whose orientation is controlled with respect to a work surface of said workstation; said keyboard support member comprising two side pieces spaced apart by a center section, said side pieces defining aligned slots on opposite sides of the center section; b) a workstation engaging member that supports the keyboard for back and forth movement with respect to the workstation to allow the keyboard to be stored in a storage position and be moved to an in use position; c) a linkage for adjusting a relative position of the keyboard support member with respect to the workstation engaging member; and d) wherein said workstation engaging member comprises: i) a housing supporting a track defining a generally linear travel path; and ii) a keyboard support carriage for movement along the track.

96. The apparatus of claim 95 wherein the linkage comprises first and second linkage arms pivotally supported at spaced apart locations so that the first and second linkage arms pivot



independently from each other during height and orientation adjustment of the keyboard with respect to the workstation.

97. The apparatus of claim 95 in which said linkage comprises a bar connecting said keyboard support carriage and said keyboard support member, said apparatus further comprising: a stopping means comprising: i) a first engagement surface on said bar connecting said keyboard support carriage and said keyboard support member; and ii) a second engagement surface for angular frictional engagement with said first engagement surface.

98. Apparatus for movably supporting a keyboard with respect to a workstation comprising: a) a keyboard support member having a generally planar keyboard support surface whose orientation is controlled with respect to a work surface of said workstation; said keyboard support member comprising two side pieces above, and at substantially interior, but spaced, points on said keyboard support member, said side pieces defining aligned slots on opposite sides of the center section; b) a workstation engaging member that supports the keyboard for back and forth movement with respect to the workstation to allow the keyboard to be stored in a storage position and be moved to an in use position; c) a linkage for adjusting a relative position of the keyboard support member with respect to the workstation engaging member; and d) wherein said workstation engaging member comprises: i) a housing supporting a track defining a generally linear travel path; and ii) a keyboard support carriage for movement along the track.

99. Apparatus for movably supporting a keyboard with respect to a workstation comprising: a) a keyboard engaging member having a generally planar keyboard support surface whose orientation is controlled to control an orientation of the keyboard with respect to a work surface of said workstation; said keyboard engaging member comprising two parallel side pieces spaced apart by a center section, said side pieces defining aligned slots on opposite sides of the center section; b) a workstation engaging member that supports the keyboard for back and forth movement with respect to the workstation to allow the keyboard to be stored in a storage position and be moved to an in use position; and c) a linkage for adjusting a relative position of the keyboard engaging member with respect to the workstation engaging member, the linkage comprising: i) an engagement surface on at least one end of said linkage; ii) a wedge member mounted for operable engagement with said linkage engagement surface; and d)

wherein said workstation engaging member comprises: i) at least one horizontally oriented track in which said linkage may ride; and ii) a keyboard support carriage supported by a slide and movable along the slide.

100. Apparatus for movably supporting a keyboard with respect to a workstation comprising: a) a keyboard support member having a generally planar keyboard support surface whose orientation is controlled with respect to a work surface of said workstation; said keyboard support member comprising two side pieces above, and at substantially interior, but spaced, points on said keyboard support member, said side pieces defining aligned slots on opposite sides of the center section; b) a workstation engaging member that supports the keyboard for back and forth movement with respect to the workstation to allow the keyboard to be stored in a storage position and be moved to an in use position; and c) a linkage for adjusting a relative position of the keyboard engaging member with respect to the workstation engaging member, the linkage comprising: i) an engagement surface on at least one end of said linkage; ii) a wedge member mounted for operable engagement with said linkage engagement surface; and d) wherein said workstation engaging member comprises: i) at least one horizontally oriented track in which said linkage may ride; and ii) a keyboard support carriage supported by a slide and movable along the slide.

101. An improved auxiliary shelf mechanism for vertically and horizontally positioning an auxiliary shelf, including a means for attaching the auxiliary shelf to a desk so that the auxiliary shelf may be movably positioned relative to the desk, wherein the improvement comprises: an articulating arm mechanism comprising: (a) a mounting bracket, the mounting bracket having a front end and a back end, the front end being closer to the front of the desk than the back end; (b) an upper arm having a rear end and a front end, the upper arm being pivotally connected to the mounting bracket at a first point, the rear of the upper arm being defined as the end of the upper arm closest to the mounting bracket and the front end being defined as the end opposite the rear end point; (c) a shelf bracket pivotally connected to the upper arm at a second point; (d) a side arm having a front end and a rear end, the side arm being pivotally connected to the shelf bracket at a third point; the side arm being further attached to the mounting bracket at a fourth point; the side arm having within it a first opening such that the side arm can be pivoted relative to the mounting bracket about the fourth point and can be reciprocatingly moved

relative to the fourth point; the front of the side arm being defined as the end closest to the third point, and the rear of the side arm being defined as the end opposite from the front; (e) a stopping means, the stopping means having a first side facing towards the rear of the side arm, such that when the side arm moves laterally relative to the fourth point, the rear of the side arm can contact the first side of the stopping means; wherein the side arm and the upper arm are not substantially parallel to each other, wherein the articulating arm mechanism further comprises a lower arm, the lower arm being pivotally attached to the upper arm at a fifth point, the fifth point being disposed between the first and second points, the lower arm being further attached to the mounting bracket at the fourth point, the lower arm further having within it a second opening, such that the lower arm can pivot about the fourth point and can be reciprocatingly moved relative to the fourth point.

102 An articulating arm mechanism for connecting a shelf to a desk comprising: (a) a mounting bracket, the mounting bracket having a front end and a back end; (b) an upper arm having a rear end and a front end, said upper arm being pivotally connected to the mounting bracket at a first point, the rear of the upper arm being defined as the end of the upper arm closest to the mounting bracket and the front being defined as the end opposite the rear end; (c) a shelf bracket pivotally connected to the upper arm at a second point; (d) a side arm having a front end and a rear end, said side arm being pivotally connected to the shelf bracket at a third point; the side arm being further attached to the mounting bracket at a fourth point; the side arm having within it a first opening such that the side arm can be pivoted relative to the mounting bracket about the fourth ~~pivot~~ point and can be reciprocatingly moved relative to the fourth point; the front of the side arm being defined as the end closest to the third point, and the rear of the side arm being defined as the end opposite from the front; (e) a stopping means, the stopping means having a first side facing towards the rear of the side arm, such that when the side arm moves laterally relative to the fourth point is the rear of the side arm can contact the first side of the stopping means; wherein the side arm and the upper arm are substantially not parallel to each other, wherein the articulating arm mechanism further comprises a lower arm, the lower arm being pivotally attached to the upper arm at a fifth point, the fifth point being disposed between the first and second points, the lower arm being further attached to the mounting bracket at the fourth point, the lower arm further having within it a second opening, such that the lower arm can move about the fourth point both pivotally and reciprocatingly.

9. ***Evidence Appendix.***

This appeal relies solely upon the existing record of the above-identified application.

10. ***Related Proceedings Appendix.***

There are no related proceedings.

**CONCLUSION**

For the reasons given above, the Applicants respectfully submit the anticipation and obviousness rejections must be reversed with directions to the Examiner to allow the appealed claims at an early date.

Respectfully submitted,



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